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11 12	IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION,	MDL NO. 2843  CASE NO. 3:18-MD-02843-VC-JSC
13	This document relates to:	HON. VINCE CHHABRIA HON. JACQUELINE SCOTT CORLEY COURTROOM 4 – 17 <sup>TH</sup> FLOOR
14	ALL ACTIONS	SPECIAL MASTER, DANIEL GARRIE, ESQ.
15 16 17		AMENDED ORDER REGARDING PRODUCTION OF NAMED PLAINTIFF DATA
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AMENDED ORDER REGARDING PRODUCTION OF NAMED PLAINTIFF DATA

#### INTRODUCTION

1. Pending before the Special Master is Plaintiffs' Motion to Compel Production of Named Plaintiffs' Content and Information.

#### **BACKGROUND**

- 2. On November 25, 2019, Plaintiffs' served Requests for Production Nos. 9-13, which seek documents relating to the named Plaintiffs in this matter ("Named Plaintiffs"). See Exhibit A (RFPs 9-13). In brief, Request No. 9 seeks all documents relating to each of the Named Plaintiffs; Request No. 10 seeks documents sufficient to show the categories of content and information Facebook collects, tracks, and maintains about them; and Requests Nos. 11-13 seek documents identifying third parties that were able to access information about the Named Plaintiffs. <u>Id.</u>
- 3. In response to Requests for Production Nos. 9-13, Facebook produced more than one million pages of individual user data it maintained relating to the Named Plaintiffs, most of which was obtained from the "Download Your Information" tool ("DYI Tool"). The data obtained from the DYI Tool is mostly limited to information pertaining to users' on platform Facebook activity. See Exhibit B (DYI Data).
- 4. Statements by Facebook's counsel during an August 14, 2020, discovery hearing indicated that Facebook maintained additional data related to the Named Plaintiffs that was not produced. See Exhibit C (8/14/2020 Discovery Hearing Transcript) at 8:10-13 ("There is other there's Facebook-generated information, information generated by third parties, information received from third parties. We have not represented that that is comprehensively included in our production.").
- 5. Plaintiffs filed a motion in September 2020 to compel additional discovery related to Requests for Production Nos. 9-13. See Exhibit D (Motion to Compel Additional Discovery Related to RFPs 9-13). Plaintiffs asked the Court to compel production of sensitive information Facebook derives and collects from business partners, app developers, apps, and other sources. This request included

"native, appended and behavioral data" and purportedly anonymized data that could be connected to the Named Plaintiffs. Id. at 7-11.

- 6. On October 8, 2020, Facebook responded to Plaintiffs' motion to compel. See Exhibit E (Facebook's October 2020 Response). Facebook contended that all information related to the Named Plaintiffs that they did not themselves share on Facebook was outside the scope of the case; that all information not shared through one of the four theories of the case was not within the scope of the case; that Plaintiffs were not entitled to all data collected from third parties about the Named Plaintiffs; that the Stored Communications Act and Video Protection Privacy Act claims did not require the production of additional data Facebook had collected about the Named Plaintiffs; and that Facebook could not reasonably collect any of the additional information Plaintiffs sought. Id. at 6-10.
- 7. On October 29, 2020, Judge Corley issued Discovery Order No. 9, ruling "that discovery is not as limited as Facebook contends" and "the discoverable user data at issue includes: [1] Data collected from a user's on-platform activity; [2] Data obtained from third parties regarding a user's off-platform activities; and [3] Data inferred from a user's on or off-platform activity." See Exhibit F (Discovery Order No. 9) at 2.
- 8. Facebook did not produce additional documents in response to Requests for Production Nos. 9-13.
- 9. On October 6, 2021, Special Master Garrie and Judge Andler declared impasse on the issue of whether Facebook should be compelled to produce additional documents related to the Named Plaintiffs pursuant to Discovery Order No. 9.
- 10. On November 29, 2021, Special Master Garrie issued an Order Re: Plaintiffs' Motion to Compel Production of Plaintiff Data which found that "Discovery Order No. 9 does not limit the scope of discoverable data related to the Named Plaintiffs to data that was shared with third parties, as Facebook contends, because Judge Corley's ruling contains no language indicating such a limitation."

  See Exhibit G (Order Re: Plaintiffs' Motion to Compel Production of Plaintiff Data) at 4. The November

29, 2021, order also required Facebook to provide a list of data sources that may contain Named Plaintiff data, including descriptions of the data sources and the Named Plaintiff data they may contain.

- 11. Facebook subsequently provided a list of data systems that may contain Named Plaintiff data without descriptions of the systems or data. See Exhibit H (Declaration of David Pope, Exhibit A).
- 12. On December 29, 2021, Special Master Garrie issued an Amended Order Re: Plaintiffs' Motion to Compel Production of Plaintiff Data, which required Facebook to provide descriptions of the purposes of each system and the business units that use each system. Special Master Garrie held a hearing with David Pope to address these points. See Exhibit I (David Pope Hearing Transcript).
- 13. Over the next three months, Special Master Garrie held a series of hearings with various Facebook engineers and requested documentation to develop an understanding of the systems identified by David Pope. The submissions and findings in connection with these hearings are reflected in the following documents: Exhibit J (Facebook's January 6, 2022 Letter); Exhibit K (Facebook's January 27, 2022 Letter); Exhibit L (February 17, 2022 Hearing Transcript); Exhibit M (Facebook's March 7, 2022 Letter); Exhibit N (March 9, 2022 Hearing Transcript).
- 14. On March 22, 2022, Special Master Garrie issued the Order Following March 9, 2022, Hearing Regarding Plaintiffs' Motion to Compel Production of Plaintiff Data, which required each party to submit a proposed protocol for production of Named Plaintiff data. See Exhibit O (March 9, 2022, Hearing Order).
- 15. The parties subsequently submitted their proposed protocols and on May 17, 2022, Special Master Garrie held a hearing with the parties to identify and resolve areas of disagreement with respect to proposed protocols. See Exhibit P (Facebook's Letter of April 18, 2022) and Exhibit Q (Plaintiffs' Letter of April 29, 2022).
  - 16. Following the May 17, 2022 hearing, the parties agreed on all aspects of the proposed

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protocols except for the following three issues: selection of Hive tables for production; 1 production of data related to apps installed by friends of Named Plaintiffs; and whether Facebook should search cold storage for Named Plaintiff data in Hive. Special Master Garrie requested briefing on these three issues, an updated proposed protocol submission from Facebook reflecting the areas of agreement, and additional information from Facebook regarding the Hive tables. See Exhibit R (May 17, 2022 Hearing Order); Exhibit S (Facebook's May 30, 2022 Letter); Exhibit T (Facebook's June 2, 2022 Letter).

17. On June 7, 2022, the parties submitted their briefs on the three outstanding issues regarding the Named Plaintiff data proposals.

18. Facebook proposed searching for and producing Named Plaintiff data from a sample of the

Hive tables identified in Exhibit B to Facebook's April 11, 2022 submission.<sup>2</sup> See Exhibit U (Facebook's June 7, 2022 Letter). The sample would include 250 tables selected by Facebook and 250 tables selected by Plaintiffs. Id. To assist Plaintiffs in the table selection, Facebook agreed to provide Plaintiffs with the schema (column names) for all Hive tables from which the sample would be selected. See Exhibit T (Facebook's June 2, 2022 Letter). Facebook agreed to "provide Plaintiffs data regarding interactions that friends of the named plaintiffs had with businesses/apps using Facebook Login, without identifying which friend interacted with each business/app." See Exhibit U (Facebook's June 7, 2022 Letter). With respect to the cold storage issue Facebook stated that "Facebook is willing to consider restoring data from cold storage, but identifying what, if any, data should be restored is premature at this stage." Id. Facebook instead proposed the following: "Once the Hive tables have been identified, Facebook will evaluate which tables, if any, include data in cold storage, and make a proposal regarding what, if any, data it can reasonably restore, search, and produce." Id.

<sup>&</sup>lt;sup>1</sup> Facebook initially proposed searching a sample of 200 Hive tables (100 selected by Plaintiffs and 100 selected by Facebook) for Named Plaintiff data. See Exhibit P (Facebook's Letter of April 18, 2022). Plaintiffs initially proposed that Facebook produce the first five rows of all 11.051 Hive tables identified in Exhibit B to Facebook's April 11, 2022 submission. See Exhibit Q (Plaintiffs' Letter of April 29, 2022).

<sup>■</sup> Hive tables as potentially containing Named Plaintiff data using a data classification tool <sup>2</sup> Facebook identified these that can classify tables within Hive as containing (identification numbers for individual Facebook users). See Exhibit T (Facebook's June 2, 2022 Letter).

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Named Plaintiff data proceedings)." Id. at 1-2.

22. Plaintiffs argue, among other things, that representations made by Facebook's counsel with and the Hive tables is inconsistent with Facebook's sworn testimony. See Exhibit X (Facebook's June 20, 2022 Letter) at 2. Plaintiffs request an order requiring a production date of Friday, June 24, 2022 for the Hive schema, fields and documents sufficient to describe the contents of the tables. <u>Id.</u> at 2. Plaintiffs further request an order to show cause why Facebook should not be ordered to produce all Hive tables referencing user identifiers immediately. <u>Id.</u> at 2. Plaintiffs also argue that internal Facebook communications produced to date indicate that it is easier for Facebook to restore data from cold storage than Facebook has represented, and Facebook should be ordered to restore data from cold storage. Id. at 3.

#### **FINDINGS**

- 23. Special Master Garrie finds that the parties agree with respect to the production of the following buckets of data: (1) user objects and associations to those objects in the TAO system for each Named Plaintiff; (2) Named Plaintiff data in the system; (3) specific types of data in Hive requested or referenced by Plaintiffs in challenging Facebook's production of Named Plaintiff data;<sup>3</sup> and (4) data regarding interactions that friends of the Named Plaintiffs had with businesses/apps using Facebook Login (without identifying which friend interacted with each business/app). See Exhibit S (Facebook's May 30, 2022 Letter); Exhibit U (Facebook's June 7, 2022 Letter).
- 24. Special Master Garrie finds that the parties agree on the following additional items in connection with the production of Named Plaintiff data: (1) Facebook will produce the TAO schema for the TAO data to be produced; (2) Facebook confirms it will produce the Hive data described in paragraph 23 above regardless of whether it appears in the DYI files; (3) Facebook will provide the

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<sup>&</sup>lt;sup>3</sup> This includes off-platform activity, ad interests, ad click data, ad impressions data, and custom audience data. See Exhibit S (Facebook's May 30, 2022 Letter) at 3.

names of the tables from which the Hive data described in paragraph 23 above will be produced, how Facebook identified the tables, and the schema for such data; (4) Facebook will provide the schema (column names) for all Hive tables identified in Exhibit B to Facebook's April 11, 2022 submission and the schema for all of the that contain user identifiers; (5) Facebook will produce "set permissions" (audience controls on a post), including any audience controls on individual pieces of content, from TAO; (6) Facebook will produce updated privacy settings for each Named Plaintiff. See Exhibit S (Facebook's May 30, 2022 Letter).

- 25. The issues on which the parties do not appear to agree are the procedure for sampling Hive tables and searching cold storage for Hive tables.
- 26. With regards to Hive table sampling, Facebook's proposal to provide the schema for the

  Hive tables, search a sample 500 tables (250 selected by Facebook and 250 selected by

  Plaintiffs) for Named Plaintiff data, and produce Named Plaintiff data identified is more appropriate

  than Plaintiffs' initial proposal of requiring Facebook to produce the first five rows of all

  Hive tables because the Hive table schema Facebook agreed to provide would give Plaintiffs substantially the same information sought by Plaintiffs' proposal without the additional burden of producing tens of thousands of rows of data that are unlikely to contain Named Plaintiff data. Plaintiffs also will be able to use the Hive table schema to select tables they believe are most relevant.
- 27. With regards to searching cold storage for Hive tables, Facebook's proposal to first identify the Hive tables to be searched, then determine whether any tables contain data in cold storage, and, if so, make proposals as to searching cold storage is appropriate, as we will be better positioned to develop a protocol for searching cold storage once we know the volume of cold storage data there will be for the Hive tables selected (if any). Facebook's proposal also preserves both parties' rights to make arguments regarding cold storage once the tables are identified.
  - 28. Based on Special Master Garrie's interviews with Facebook engineers and the Facebook's

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cold storage and estimate the amount of data in cold storage for each table. Special Master Garrie will set a briefing schedule for proposals regarding searching cold storage at this time. In parallel with the cold storage analysis, Facebook is to search data in warm storage for the 500 Hive tables for data associated with the Named Plaintiffs and produce such data on a rolling weekly basis. Once Named Plaintiff data has been produced from all 500 Hive tables, Facebook is to determine what percentage of this data has not been produced from other sources and to submit a statement to this effect. Once Facebook has provided the results of this analysis Special Master Garrie will determine the appropriate next steps concerning Hive data.

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Friday, July 1, 2022

IT IS SO ORDERED.

Daniel Garrie
Discovery Special Master

## Exhibit A

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### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION

This document relates to:

**ALL ACTIONS** 

MDL No. 2843 Case No. 18-md-02843-VC

PLAINTIFFS' SECOND SET OF REQUESTS FOR PRODUCTION TO DEFENDANT FACEBOOK, INC.

Judge: Hon. Vince Chhabria Courtroom: 4, 17th Floor PROPOUNDING PARTY: Plaintiffs

RESPONDING PARTY: Facebook

SET NUMBER: Two (2)

Plaintiffs hereby propound the following requests for production of documents to Defendant Facebook, Inc. ("Facebook"), pursuant to Federal Rules of Civil Procedure 26 and 34, and request that Facebook produce the documents and electronically-stored information set forth herein within thirty (30) days of service of these requests, at Bleichmar Fonti & Auld LLP, 555 12th Street, Suite 1600, Oakland, CA 94607.

#### **INSTRUCTIONS**

- 1. You shall respond to these requests for the production of documents in a manner consistent with the Federal Rules of Civil Procedure and the following instructions:
- 2. In responding to each document request, furnish all responsive documents available at the time of production, including documents in your possession, custody or control, and in the possession, custody or control of your agents, employees, partners, representatives, subsidiaries, affiliates, investigators, or by your attorneys or their agents, employees or investigators.
- 3. If any otherwise responsive document was, but is no longer, in existence or in your possession, custody or control, identify the type of information contained in the document, its current or last known custodian, the location/address of such document, the identity of all persons having knowledge or who had knowledge of the document and describe in full the circumstances surrounding its disposition from your possession or control.
- 4. This is a continuing request for the production of documents and requires supplemental responses as provided for in the Federal Rules of Civil Procedure. If, after making your initial production, you (or any other persons acting on your behalf) obtain or become aware

of any further documents responsive to any document request, you are required to produce such additional documents to plaintiffs. Each supplemental response shall be served on plaintiffs no later than thirty days after the discovery of the further information.

- 5. You shall produce the original of each document described below or, if the original is not in your custody, then a copy thereof, and in any event, all non-identical copies which differ from the original or from the other copies produced for any reason, including, without limitation, the making of notes thereon.
- 6. Documents shall be produced as kept in the regular course of business together with the original folders, binders, boxes or other containers in which they were maintained.
- 7. All documents or things that respond in whole or in part to any portion of these requests are to be produced in their entirety, including attachments and their enclosures.
  - 8. Documents attached to each other should not be separated.
- 9. Documents not otherwise responsive to any particular document request shall be produced if such documents mention, discuss, refer to, or explain the documents called for by any document request, or if such documents are attached to documents called for by any document request.
- 10. Documents shall be produced in such fashion as to identify the custodian of each document.
- 11. Identify the source of each document produced, by identifying: (a) all of the person(s) who possessed the document; (b) the positions or titles of any such individuals; and (c) all of the divisions and departments where each document was located. If you are unable to determine the individual(s) who possessed the document, identify the department and division where the document was located when produced.

- 12. If you claim any form of privilege, whether based on statute or otherwise, as a ground for not producing any document, state the following:
  - a. The date of the document;
  - b. The name, the present or last known home and business address, the telephone numbers, the title (or position), and the occupation of those individuals who prepared, produced, reproduced or who were recipients of said document;
  - c. A description of the document sufficient to identify it without revealing the information for which the privilege is claimed;
  - d. The nature of the privilege asserted;
  - e. The factual basis upon which you claim any such privilege;
  - f. The location of the document; and
  - g. The custodian of the document.
- 13. To the extent you object to any document request, you must provide specific responses as to what portion of the request you object to and state expressly why you will not respond to such request in sufficient detail to permit the Court to determine the validity of the objection. Responsive documents to which your objection does not apply should be produced.
- 14. If you claim that all or any part of any document request, the Definitions, or Instructions is vague or ambiguous, please identify the specific language you consider vague or ambiguous and state the interpretation of the language in question you used to frame your response.
- 15. Each document requested herein is to be produced in its entirety and without deletion or excision, regardless of whether you consider the entire document to be relevant or responsive to any document request. If you have removed, excised or deleted any portion of a

document, stamp the word "REDACTED" on each page of the document that you have redacted.

Redactions should be included on the privilege log described in Instruction No. 13, above.

- 16. One copy of each document should be produced. A document that varies in any way from the original or from any other copy, including drafts or a document with handwritten notations or deletions constitutes a separate document and must be produced, whether or not the original is in your possession, custody or control. Color (*i.e.*, not black and white) originals should be produced in color. If any identical copy cannot be produced for any reason (*e.g.*, faint writing, erasures, etc.), produce the original.
- 17. Indicate the origin of each document and number each document with consecutive Bates numbers.

#### **DEFINITIONS**

Unless otherwise stated, the terms set forth below are defined as follows and shall be used in construing the meaning of these requests for the production of documents.

- 1. The use of the singular shall be deemed to include the plural, and the use of one gender shall include all others, as appropriate, in the context.
  - 2. The present tense of a verb includes its past tense, and vice versa.
- 3. "And" and "or" are to be construed conjunctively and disjunctively, as necessary, to bring within the scope of this request for production all responses that might otherwise be construed to be outside its scope.
  - 4. "Any" and "all" mean each and every.
- 5. "App" means an interactive software application developed to utilize the core technologies of the Facebook social networking platform.
- 6. "App Developer Investigation" or "ADI" means (as described in paragraph seven of the Chen Declaration) Facebook's investigation to determine "whether there has been misuse

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of data in violation of Facebook's policies and associated legal liabilities, in connection with the first version of the [Facebook] Platform."

- 7. "Apps Others Use" means the setting used to prevent the disclosure of personal information to third party App Developers through Facebook's API, as described in paragraphs 366 to 368 of the FAC.
- 8. "App Settings" means settings that a User can alter or accept to limit Third Parties from accessing or obtaining Users' Content and Information, including Apps Others Use, Granular Data Permissions, Platform Opt Out, and the like.
- 9. "Chen Declaration" means the Declaration of Stacy Chen in Support of Respondent's Opposition to the Attorney General's Petition, Attorney General Maura Healy v. Facebook, Inc., No. 1984CV02597-BFS-1 (Mass. Super Ct., Suffolk Cty.).
- 10. "Communication" means the transmittal (in the form of facts, ideas, thoughts, opinions, data, inquiries or otherwise) and includes, but is not limited to, correspondence, memoranda, reports, presentations, face-to-face conversations, telephone conversations, text messages, instant messages, messages sent on Facebook Messenger, voice messages, negotiations, agreements, inquiries, understandings, meetings, letters, notes, telegrams, mail, electronic mail or email, and postings of any type.
- 11. "Computer System" or "Computer Systems" include(s), but is not limited to, any server (whether physical or virtual), desktop computer, tablet computer, point of sale system, smart phone, cellular telephone, networking equipment, internet site, intranet site, and the software programs, applications, scripts, operating systems, or databases used to control, access, store, add, delete, or modify any information stored on any of the foregoing non-exclusive list.
- 12. "Content and Information" refers to the definition in footnote 2 of the FAC, referring to "content" and "information" as Facebook's Statements of Rights and

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Responsibilities have defined those terms. In brief, Facebook has generally used "information" to mean facts and other information about Users, including the actions they take, and "content" to mean anything Users post on Facebook that would not be included in the definition of "information." Content and Information also includes both personally identifiable content and information and anonymized content and information that is capable of being de-anonymized. See FAC ¶¶ 223-224. Content and Information includes data that identifies, relates to, describes, is capable of being associated with, or could reasonably be linked, directly or indirectly, with a particular User, including:

- a. Identifiers such as a real name, alias, postal address, unique personal identifier, online identifier, Internet Protocol address, email address, account name, social security number, driver's license number, passport number, or other similar identifiers.
- b. Characteristics of protected classifications under California or federal law.
- c. Commercial information, including records of personal property, products or services purchased, obtained, or considered, or other purchasing or consuming histories or tendencies.
- d. Biometric information.
- e. Internet or other electronic network activity information, including, but not limited to, browsing history, search history, and information regarding a consumer's interaction with an Internet Web site, application, or advertisement.
- f. Geolocation data.
- g. Audio, electronic, visual, thermal, olfactory, or similar information.
- h. Professional or employment-related information.

- Education information, defined as information that is not publicly available
  personally identifiable information as defined in the Family Educational Rights
  and Privacy Act (20 U.S.C. section 1232g, 34 C.F.R. Part 99).
- j. Inferences drawn from any of the information identified in this paragraph to create a profile, dossier, or similar collection of information about a consumer reflecting the consumer's preferences, characteristics, psychological trends, predispositions, behavior, attitudes, intelligence, abilities, and aptitudes.
- 13. "Document" or "Documents" is defined to include any Document, ESI, or Electronic Media stored in any medium, and is synonymous in meaning and equal in scope to the usage of this term in Federal Rule of Civil Procedure 34(a)(1)(A), including, but not limited to, electronic or computerized data compilations, Communications, electronic chats, instant messaging, documents created through Workplace by Facebook, encrypted or self-destructing messages, messages sent via Facebook messenger, email Communications, other electronically stored information from Personal computers, sound recordings, photographs, and hard copy Documents maintained in your Personal files.
- 14. "Electronic Media" means any magnetic, optical, or other storage media device used to record ESI including but not limited to computer memory, hard disks, floppy disks, flash memory devices, CDs, DVDs, Blu-ray discs, cloud storage (*e.g.*, DropBox, Box, OneDrive, or SharePoint), tablet computers (*e.g.*, iPad, Kindle, Nook, or Samsung Galaxy), cellular or smart phones (*e.g.*, BlackBerry, iPhone, or Samsung Galaxy), personal digital assistants, magnetic tapes of all types, or any other means for digital storage and/or transmittal.
- 15. "Electronically Stored Information" or "ESI" means information that is stored in Electronic Media, regardless of the media or whether it is in the original format in which it was created, and that is retrievable in perceivable form and includes, but is not limited to, metadata,

system data, deleted data, fragmented data, data pertaining to or maintained in Apps, database contents, and computer code.

- 16. "FAC" refers to the First Amended Consolidated Complaint filed February 22, 2019, ECF No. 257.
- 17. "Facebook," "Defendant," "You," or "Your" shall mean Facebook, Inc. and any of its executives, directors, officers, employees, partners, members, representatives, agents (including attorneys, accountants, consultants, investment advisors or bankers), and any other Person purporting to act on its behalf. In the case of business entities, these defined terms include parents, subsidiaries, affiliates, predecessor entities, successor entities, these defined terms include parents, subsidiaries, affiliates, predecessor entities, successor entities, divisions, departments, groups, acquired entities and/or related entities or any other entity acting or purporting to act on its behalf.
- 18. "FTC Consent Order" shall refer to the July 27, 2012 Federal Trade Commission Consent Order in *In the Matter of Facebook, Inc.*, No. C-4365.
- 19. "Granular Data Permissions" means the setting through which the User accessing an App may limit the categories of Content and Information an App Developer may collect.
- 20. "Identify," with respect to Documents, means to give, to the extent known, the
  (a) type of Document; (b) general subject matter; (c) date of the Document; (d) author(s);
  (e) addressee(s); and (f) recipient(s).
- 21. "Including" means "including but not limited to," or "including, without limitation." Any examples which follow these phrases are set forth to clarify the request, definition or instruction but not to limit the request.

- 22. "Internal Policy" or "Internal Policies" mean any formal or informal policy, procedure, rule, guideline, collaborative document, directive, instruction, or practice, whether written or unwritten, that You expect Your employees to follow in performing their jobs.
- 23. "Misuse of Data," when used as a capitalized phrase, means the use by an App of a User's Content or Information that was broader or different than the use of that content or information only in connection with the person that gave the permission to the App to access such User's Content or Information.
- 24 "Named Plaintiffs" means Steven Akins, Jason Ariciu, Samuel Armstrong, Anthony Bell, Bridgett Burk, Brendan Carr, John Doe, Terry Fischer, Shelly Forman, Paige Grays, Mary Beth Grisi, Tabielle Holsinger, Taunna Lee Johnson, Olivia Johnston, Tyler King, Ashley Kmieciak, William Lloyd, Gretchen Maxwell, Scott McDonnell, Ian Miller, Jordan O'Hara, Bridget Peters, Kimberly Robertson, Scott Schinder, Cheryl Senko, Dustin Short, Tonya Smith, Mitchell Staggs, Charnae Tutt, Barbara Vance-Guerbe, and Juliana Watson.
- "Person" or "Persons" means any natural Person or any business, legal or 25. governmental entity or association.
- 26. "Platform" refers to the services, tools, and products provided by Facebook to third parties to create their own applications and services that access data in Facebook.
- 27. "Platform Opt Out" means the setting a User may access to choose that his or her Content and information is not accessed or obtained by any Apps or websites on Facebook's Platform.
- 28. "Privacy Controls" means the audience selectors that control what information in a User's profile can be viewed by other Users, and includes Profile Privacy Settings, Profile Privacy Controls, Publisher Privacy Controls, and the like.

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- 29. "Relating to," "relate to," "referring to," "refer to," "reflecting," "reflect," "concerning," or "concern" means all Documents which comprise, explicitly or implicitly refer to, were reviewed in conjunction with, or were created, generated or maintained as a result of the subject matter of the request, including, but not limited to, all Documents which reflect, record, memorialize, embody, discuss, evaluate, consider, review or report on the subject matter of the request.
  - 30. "Third Parties" include the following:
    - a. Apps, App Developers, Whitelisted Apps, and Business Partners, as those terms are used in the FAC;
    - Any person that develops an application, software experience, game, or website that accesses Content and Information from Facebook's API or other Facebook software; and
    - c. Any person with which Facebook has or had an integration partnership.
- 31. "User(s)" means individuals who maintain a Facebook account and can generally access the typical Facebook experience through website or mobile applications.
- 32. Capitalized terms and acronyms not specifically defined herein have the same definition as in the FAC.

#### **RELEVANT TIME PERIOD**

The relevant time period for each Document Request is January 1, 2007 through the present (the "Relevant Time Period"), unless otherwise specifically indicated. Each Document Request shall be interpreted to include all documents and information that relate to the Relevant Time Period or otherwise specified period, even if such documents or information were prepared or published outside of the Relevant Time Period or otherwise specified period. If a document prepared before or after this period is necessary for a correct or complete understanding of any

document covered by a request, you must produce the earlier or subsequent document as well. If any document is undated and the date of its preparation cannot be determined, the document shall be produced if otherwise responsive to the production request.

#### **DOCUMENT REQUESTS**

#### **REQUEST FOR PRODUCTION NO. 6**

All Documents provided to or received from any governmental entity or regulator in the United States and United Kingdom in response to any formal or informal inquiry or investigation relating to whether Users' Content and Information was accessed or obtained by any Third Parties without proper consent or authorization, including but not limited to all inquiries or investigations arising out of the Cambridge Analytica Scandal, the FTC Consent Order, and any inquiry or investigation related to the settlement agreement with the FTC announced on July 24, 2019.

#### **REQUEST FOR PRODUCTION NO. 7**

All organizational charts, personnel directories, or other documents sufficient to show Your organizational structure, including:

- (a) the identity of subsidiaries, affiliates, and joint ventures, and your ownership interest, control of, or participation in any subsidiary or affiliate or joint venture related to agreements, engineering, access, use, transmission, receipt, collection or analysis of Facebook Users' Content and Information by Third Parties;
- (b) the organization of any division, department, unit or subdivision of your company that has responsibilities relating to agreements, engineering, access, use, transmission, receipt, collection or analysis of Users' Content and Information by Third Parties; and
- (c) the names, titles, job descriptions, and employment periods for your present and former employees who has or had responsibilities relating to agreements, engineering, access,

use, transmission, receipt, collection or analysis of Users' Content and Information by Third Parties; and

(d) the names, titles, job descriptions, and employment periods of Your present or former directors, officers, or senior managers, as well as any secretaries or administrative assistants assigned to these directors, officers, or senior managers.

#### **REQUEST FOR PRODUCTION NO. 8**

All versions (including each updated or amended version thereof) of Facebook's "Platform Policies," which have been called the "Developer Principles and Policies," the "Platform Guidelines," or the "Developer Terms of Service" (collectively, the "Platform Policies").

#### **REQUEST FOR PRODUCTION NO. 9**

All Documents relating to each of the Named Plaintiffs, including but not limited to all Content and Information collected about each of them or gained from business relationships or any other source.

#### **REQUEST FOR PRODUCTION NO. 10**

For each of the Named Plaintiffs, Documents sufficient to show the categories of Content and Information Facebook collects, tracks, and maintains about them.

#### **REQUEST FOR PRODUCTION NO. 11**

Documents sufficient to identify all Third Parties to which Facebook granted access to Named Plaintiffs' Content and Information, what categories of Content and Information Facebook granted access to, how Facebook allowed these Third Parties to access the Named Plaintiffs' Content and Information, and the business purpose of all such access.

Documents relating to any partnerships or agreements Facebook entered into with Third Parties for access to Named Plaintiffs' Content and Information.

#### **REQUEST FOR PRODUCTION NO. 13**

For all Third Parties to which Facebook granted access to Named Plaintiffs' Content and Information, Documents sufficient to show any use by Third Parties of such Content and Information not in connection with the User that granted the permission to the Third Party or inconsistent with Facebook's agreement with that Third Party.

#### **REQUEST FOR PRODUCTION NO. 14**

Documents sufficient to show the monetary or retail value of each named Plaintiff's Content and Information to Facebook, updated to reflect whenever Facebook's terms of service changed, including the calculation of revenue earned by Facebook for each Named Plaintiff based upon bartering or selling access to such Named Plaintiff's Content and Information.

#### **REQUEST FOR PRODUCTION NO. 15**

Documents sufficient to show the money or any other thing of value, including but not limited to money or any other thing of value paid in exchange for targeted advertising, that Facebook received in exchange for each Named Plaintiff's Content and Information, which entities paid Facebook, and when such payments were made.

#### **REQUEST FOR PRODUCTION NO. 16**

Documents sufficient to show the monetary or retail value of Users' Content and Information to Facebook, including all monthly, quarterly, and annual financial reporting relating to same, and including but not limited to the calculation of average revenue per user, any changes to such monetary or retail value relating to changes to Facebook's terms of service, and any financial reporting of Content and Information as an asset.

All Documents relating to Facebook's assessment of the monetary or retail value of Users' Content and Information to Users (as distinct from value to Facebook), including analyses for providing compensation to Users for their Content and Information, including but not limited to Users compensated in connection with the Onavo or Research app.

#### **REQUEST FOR PRODUCTION NO. 18**

All Documents that have been transmitted to Users by Facebook relating to whether Users' Content and Information was accessed or obtained by Third Parties.

#### **REQUEST FOR PRODUCTION NO. 19**

All Documents supporting the escalation of those Apps escalated to Phase Two of ADI for Enhanced Examination and/or Phase Three of ADI for Enforcement and designated as follows in the Chen Declaration ¶ 34:

(d) each [A]pp to which a request for information was sent; (e) each [A]pp for which an interview was sought with the developer; (f) each [A]pp for which a remote or onsite audit was requested to be conducted; (g) each [A]pp for which actual misuse was found and identification of that misuse; (h) each [A]pp that was banned for actual misuse; and (i) each [A]pp that was banned for failing to cooperate with Facebook's investigation.

Facebook has described identification of these Apps as non-privileged and has already produced it to the Massachusetts Attorney General's Office. *See* Chen Declaration ¶ 35.

#### **REQUEST FOR PRODUCTION NO. 20**

The list of Apps that Facebook provided to the Massachusetts Attorney General's Office and that the Chen Declaration ¶ 35 describes as "the subject of external actions or

communications with third parties, including the growing list of Apps Facebook has suspended as part of the [ADI], whether because of policy violations or because of their refusal to cooperate with Facebook's investigation."

#### **REQUEST FOR PRODUCTION NO. 21**

Communications between Facebook and Third Parties relating to the ADI, including but not limited to Communications that Facebook provided to the Massachusetts Attorney General's Office. *See* Chen Declaration ¶ 37.

#### **REQUEST FOR PRODUCTION NO. 22**

All "Privacy Risk Assessment[s]," and notes or agenda relating to Facebook's "focused subject-matter-specific meetings," "focused subject-matter-specific discussions," "weekly intra-and inter-team meetings," and "Privacy Summit[s]," as detailed in "Facebook's Privacy Program Overview" included in any PricewaterhouseCoopers LLP ("PwC") assessment report prepared pursuant to the FTC Consent Order.

#### **REQUEST FOR PRODUCTION NO. 23**

Unredacted versions and Documents in support of the assessment reports, including the Initial Assessment Report and Biennial Reports, prepared by PwC pursuant to the FTC Consent Order.

#### **REQUEST FOR PRODUCTION NO. 24**

Documents sufficient to identify all Third Parties to which Facebook granted access to Users' Content and Information not generally available through Platform pursuant to partnerships or agreements between Facebook and those Third Parties.

#### **REQUEST FOR PRODUCTION NO. 25**

All Documents relating to agreements or partnerships described in Request No. 24.

For each of the Third Parties that Facebook entered into partnerships or agreements with as described in Request No. 24, Documents sufficient to identify:

- The fields, kinds, or categories of Content and Information that were accessed or obtained by such Third Parties;
- How each such Third Party accessed or obtained the Content and Information of Users;
- How each such Third Party used the Content and Information accessed or obtained;
- Where the Content and Information obtained by such Third Parties currently resides and who has access to it.

#### **REQUEST FOR PRODUCTION NO. 27**

Documents sufficient to show all forms and formats in which Facebook transmitted to Third Parties information concerning Users' liking, viewing, retrieving, or otherwise requesting or obtaining videos on, using, or by means of the Facebook Platform.

#### **REQUEST FOR PRODUCTION NO. 28**

All Documents relating to Internal Policies by Facebook on the monitoring of Third Parties' compliance with Facebook's Platform Policy, Data Policy, or SRR.

#### **REQUEST FOR PRODUCTION NO. 29**

All Documents relating to Internal Policies by Facebook on the enforcement of Facebook's Platform Policy, Data Policy, or SRR against Third Parties.

#### **REQUEST FOR PRODUCTION NO. 30**

All Documents relating to measures and controls, including proposed measures and controls, put in place by Facebook to prevent Third Parties from violating Facebook's Platform Policy, Data Policy, or SRR.

All Documents relating to Facebook's audits, inquiries, and investigations of Third

Parties investigating compliance with any provisions of Facebook's Platform Policy, Data

Policy, or SRR regarding the access, use, transmission, receipt, collection and analysis of Users'

Content and Information on and off the Platform.

#### **REQUEST FOR PRODUCTION NO. 32**

All Documents Concerning Misuse of Data, including investigations, examinations, inquiries, or audits—or Communications regarding such investigations, examinations, inquiries, or audits—regarding Misuse of Data prior to the deprecation of Graph API v.1.0.

#### **REQUEST FOR PRODUCTION NO. 33**

Documents sufficient to show the notice that Facebook provided to Users regarding modifications to Facebook's SRR or Data Policy, and all Communications related thereto.

#### **REQUEST FOR PRODUCTION NO. 34**

All Documents relating to the conditioning of Third Parties' access to Users' Content and Information on the purchase of Mobile App Install Ads, payment of Content and Information in-kind (referred internally as Reciprocity or Data Reciprocity), or other payment.

#### **REQUEST FOR PRODUCTION NO. 35**

Documents relating to the manner in which a Facebook User could control how his or her data was shared through their Privacy Controls and App Settings throughout the Relevant Time Period, including but not limited to screenshots of the Facebook website and the Facebook mobile application.

All Documents concerning User testing, evaluation and analysis of Facebook's Privacy

Controls and App Settings during the Relevant Time Period, including but not limited to design
documents, correspondence, analyses, and reports.

Dated: November 25, 2019

Respectfully submitted,

#### KELLER ROHRBACK L.L.P.

By: <u>/s/ Derek W. Loeser</u> Derek W. Loeser

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Plaintiffs' Co-Lead Counsel

# Exhibit B

### Exhibit A

What info is available?	What is it?	Where can I find it?
About Me	Information you added to the <b>About</b> section of your timeline like relationships, work, education, where you live and more. It includes any updates or changes you made in the past and what is currently in the <b>About</b> section of your timeline.	Downloaded Info
Account Status History	The dates when your account was reactivated, deactivated, disabled or deleted.	Downloaded Info
Active Sessions	All stored active sessions, including date, time, device, IP address, machine cookie and browser information.	Downloaded Info
Address	Your current address or any past addresses you had on your account.	Downloaded Info
Ads	Ads you've recently viewed.	Downloaded Info
Ads Clicked	Dates, times and titles of ads clicked (limited retention period).	Downloaded Info
Ad Topics	A list of topics that you may be targeted against based on your stated likes, interests and other data you put in your timeline.	Downloaded Info
Advertising ID	The unique advertising identification numbers provided by your mobile device. These numbers are used to show you ads on the apps you use on your device.	Downloaded Info
Alternate Name	Any alternate names you have on your account (example: a maiden name or a nickname).	Downloaded Info
Apps	All of the apps you have added.	Downloaded Info
Articles	Articles you've recently read.	Downloaded Info
Autofill Information	Information you've provided, such as your address, that is used to pre-fill messages when you contact a business through Messenger.	Downloaded Info
Chat	A history of the conversations you've had on Facebook Chat (a complete history is available directly from your messages inbox).	Downloaded Info

Source: What categories of my Facebook data are available to me?, https://www.facebook.com/help/930396167085762, Table 2, Information you can download using the Download Your Information tool (last visited Sept. 18, 2020).

Chat Rules	Chat Rules you've accepted.	Downloaded Info
Check-ins	The places you've checked into.	Downloaded Info
Currency	Your preferred currency on Facebook. If you use Facebook Payments, this will be used to display prices and charge your credit cards.	Downloaded Info
Current City	The city you added to the <b>About</b> section of your timeline.	Downloaded Info
Date of Birth	The date you added to Birthday in the <b>About</b> section of your timeline.	Downloaded Info
Dating	The number of times you've recently visited the Dating section of Facebook.	Downloaded Info
Device ID	The unique identification numbers provided by the devices you use to log into Facebook.	Downloaded Info
Device Locale	The country and language from which you're accessing Facebook as determined by the devices you're using.	Downloaded Info
Education	Any information you added to Education field in the About section of your timeline.	Downloaded Info
Emails	Email addresses added to your account (even those you may have removed).	Downloaded Info
Email Address Verifications	A history of when you've verified your email address.	Downloaded Info
Events	Events you've joined or been invited to.	Downloaded Info
Event Contacts You've Blocked	People you've blocked from inviting you to events.	Downloaded Info
Event Interactions	The number of times you've recently visited the Events section of Facebook.	Downloaded Info
Events Visited	Event pages you've recently visited.	Downloaded Info
Facebook Live Videos	Live videos you've recently watched.	Downloaded Info
Facebook Watch Topics for Recommendations	A collection of topics that is used to show you relevant videos in the Facebook Watch tab. The topics are	Downloaded Info

	based on your previous interaction history with things like links, videos, photos and Pages you've liked.	
Facial Recognition Data	A unique number based on a comparison of the photos you're tagged in. We use this data to help others tag you in photos.	Downloaded Info
Family	Friends you've indicated are family members.	Downloaded Info
Favorite Quotes	Information you've added to the Favorite Quotes section of the <b>About</b> section of your timeline.	Downloaded Info
Followers	A list of people who follow you.	Downloaded Info
Friends	A list of your friends.	Downloaded Info
Friend Requests	Pending, sent and received friend requests.	Downloaded Info
Friends You See Less	Friends whose activity you've chosen to see less of on Facebook.	Downloaded Info
Fundraisers	Fundraisers you've recently viewed.	Downloaded Info
Gender	The gender you added to the <b>About</b> section of your timeline.	Downloaded Info
Groups	A list of groups you belong to on Facebook.	Downloaded Info
Group Interactions	The number of times you've interacted with Groups on Facebook.	Downloaded Info
Groups Visited	Groups you've recently visited.	Downloaded Info
Hometown	The place you added to hometown in the <b>About</b> section of your timeline.	Downloaded Info
ID	A copy of the ID you submitted to confirm your identity and to help improve our automated systems for detecting fake IDs and related abuse.	Personal Data Request
Instant Games	Instant Games you've played.	Downloaded Info
IP Address Activity	Your recent activity from specific IP addresses.	Downloaded Info

IP Address Message Activity	Your recent message activity from specific IP addresses.	Downloaded Info	
IP Address Payment Activity	Your recent payment activity from specific IP addresses.	Downloaded Info	
Language Settings	Your preferred language settings.	Downloaded Info  Downloaded Info	
Last Location	Your most recent location determined by your device.		
Linked Accounts	Accounts you've linked to your Portal.	Downloaded Info	
Live Video Subscriptions	Scheduled Live videos you've subscribed to.	Downloaded Info	
Logins	IP address, date and time associated with logins to your Facebook account.	Downloaded Info	
Logouts	IP address, date and time associated with logouts from your Facebook account.	Downloaded Info	
Marketplace Categories	Categories you've recently viewed.	Downloaded Info	
Marketplace Interactions	Your recent interactions on Marketplace.	Downloaded Info	
Marketplace Items	Items you've recently viewed.	Downloaded Info	
Marketplace Services	Services you've recently viewed.	Downloaded Info	
Matched Contacts	Contact information that may be associated with your account.	Personal Data Request	
Menu Items  Areas of Facebook you've recently accessed through the main menu.		Downloaded Info	
Messages you've sent and received on Facebook Note, if you've deleted a message it won't be incluin your download as it has been deleted from you account.		Downloaded Info	
Messenger Contacts You've Blocked	Contacts you've blocked on Messenger.	Downloaded Info	
Milestone Notifications	Notifications about your activity milestones, such as the number of reactions on a post, you've received and dismissed.		

Mobile Service Provider and Country Code	The service provider and country code associated with your phone number.	Downloaded Info
Name	The name on your Facebook account.	Downloaded Info
Name Changes	Any changes you've made to the original name you used when you signed up for Facebook.	Downloaded Info
News Feed Topics for Recommendations	A collection of topics that is used to show you relevant public posts in parts of your News Feed. The topics are based on your previous interaction history with things like links, videos, photos and Pages you've liked.	Downloaded Info
News Topics for Recommendations	A collection of topics that is used to show you relevant articles in the News tab. The topics are based on your previous interaction history with things like posts, videos, photos and Pages you've liked.	Downloaded Info
Notification ID	The identification numbers that we use to send you Facebook notifications on your device.	Downloaded Info
Page Notifications	Chat notifications you've dismissed from Pages you visit.	Downloaded Info
Page Visits	Pages you've recently visited.	Downloaded Info
Page Transparency Notices	A list of pages that you've received and dismissed notices from.	Downloaded Info
Pages You Admin	A list of pages you admin.	Downloaded Info
Pages You've Recommended	Pages you've recommended to others.	Downloaded Info
Pending Friend Requests	Pending, sent and received friend requests.	Downloaded Info
People	People and friends you've interacted with recently, including comments and reactions.	Downloaded Info
People Viewed	People you've recently viewed when new friends were suggested to you.	Downloaded Info
Phone Numbers	Mobile phone numbers you've added to your account, including verified mobile numbers you've added for security purposes.	Downloaded Info

Photos	Photos you've uploaded to your account.	Downloaded Info
Photo Effects	A list of the photo effects you've used.	Downloaded Info
Photos Metadata	Any metadata that is transmitted with your uploaded photos.	Downloaded Info  Downloaded Info
Platforms	Platforms you've used to log into Facebook, such as the Facebook app or a browser.	
Pokes	A list of who's poked you and who you've poked. Poke content from our mobile poke app is not included because it's only available for a brief period of time. After the recipient has viewed the content it's permanently deleted from our systems.	Downloaded Info
Political Views	Any information you added to Political Views in the About section of timeline.	Downloaded Info
Preferred Language for Videos	The preferred language for videos as determined by videos you've previously viewed.	Downloaded Info
Previously Removed Contacts	Friends you've recently removed but added back.	Downloaded Info
Primary Location	Your primary location is determined by information we use to support Facebook Products, such as the current city you entered on your profile and your device connection information.	Downloaded Info
Profile Visits	People whose profiles you've recently visited.	Downloaded Info
Recent Activities	Actions you've taken and interactions you've recently had.	Downloaded Info
Recently Visited	Videos and shows you've recently visited.	Downloaded Info
Record Details	Details included in some administrative records.	Downloaded Info
Registration Date	The date you joined Facebook.	Downloaded Info
Religious Views	The current information you added to Religious Views in the <b>About</b> section of your timeline.	Downloaded Info
Removed Friends	People you've removed as friends.	Downloaded Info

Saved Post Reminders	Reminders you've received after you've saved a post.	Downloaded Info	
Screen Names	The screen names you've added to your account, and the service they're associated with. You can also see if they're hidden or visible on your account.	Downloaded Info	
Secret Conversations	A list of the times you've used Secret Conversations in Messenger.	Downloaded Info	
Secret Conversations You've Reported	A list of the secret conversations you've reported to Facebook.	Downloaded Info	
See First	Profiles and Pages you've recently chosen to see first in your News Feed.	Downloaded Info	
See Less	Profiles and Pages you've recently chosen to see less of in your News Feed.	Downloaded Info	
Selected Language The language you've selected to use Facebook in.		Downloaded Info	
Session Type	Sion Type Your current active session types.		
Show Pages	A list of the Show Pages you've viewed and the videos you've watched from them.		
Shows	A list of the individual videos you've watched.		
Spoken Languages	The languages you added to Spoken Languages in the <b>About</b> section of your timeline.	Downloaded Info	
Status Updates	Any status updates you've posted.	Downloaded Info	
Time Spent The amount of time you've spent watching from a Show Page.		Downloaded Info	
The amount of an individual video you've watched.		Downloaded Info	
imezone The timezone you've selected.		Downloaded Info	
Work	Any current information you've added to Work in the About section of your timeline.		
Videos	Videos you've posted to your timeline.	Downloaded Info	

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Video Creator Pages	Video creator Pages you've recently viewed.	Downloaded Info
Videos You've Removed	Videos you've removed from your Watch list.	Downloaded Info
Your Facebook Activity	A history of when you've accessed Facebook.	Downloaded Info
Your Pinned Posts	Posts you've pinned on your timeline.	Downloaded Info

## Exhibit C

#### Pages 1 - 22

#### UNITED STATES DISTRICT COURT

#### NORTHERN DISTRICT OF CALIFORNIA

Before The Honorable Jacqueline Scott Corley, Magistrate Judge

IN RE FACEBOOK, INC. CONSUMER )
PRIVACY USER PROFILE )
LITIGATION. ) NO. 18-MD-02843 VC (JSC)

San Francisco, California Friday, August 14, 2020

#### TRANSCRIPT OF REMOTE VIDEOCONFERENCE PROCEEDINGS

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Official Reporter, CSR No. 7445

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Friday - August 14, 2020 1 8:27 a.m. 2 PROCEEDINGS ---000---3 We're a minute early, but court is now in THE CLERK: 4 5 session. Let's see. Calling Civil Action 18-MD-2843, In Re Facebook, Inc. Consumer Privacy User Profile Litigation. 6 Counsel, starting with plaintiff, can you please state 7 your appearance. 8 MS. WEAVER: Sure. This is Lesley Weaver of Blakemar 9 Fonti & Auld. With me is Anne Davis and Angelica Ornelas. 10 11 And I see that Matt Montgomery actually is not -- he should be with us. So he should probably be elevated. I 12 apologize. I missed him before. Don't tell him. 13 MR. LOESER: Good morning. You have Derek Loeser from 14 Keller Rohrback. 15 16 THE COURT: Good morning. MR. KO: Good morning, Your Honor. Nice to see you 17 18 again. David Ko, Keller Rohrback, also on behalf of plaintiffs. 19 20 THE COURT: Good morning. 21 And here comes Mr. Montgomery. He's here.

All right. And for Facebook?

22

23

24

25

MR. SNYDER: Good morning, Judge. It's Orin Snyder from Gibson Dunn with my colleagues, Deb Stein, Martie Kutscher Clark, and Russ Falconer.

THE COURT: Good morning.

Okay. Thank you for your statement.

Let's see. It sounds like there are not too many things to discuss. Let's just start.

The search terms you're working on, I will just make this observation. I do think it would be unreasonable to insist that all terms apply to all custodians. That just can't be right. People have different positions. So I give you that guidance in working on that.

Now, with respect to the data about plaintiffs, let's go through. And why don't plaintiffs tell us what is the data that you're missing that you think is relevant. So one thing you've identified is the data about what data about the plaintiffs was shared with advertisers. Is that correct?

MS. WEAVER: That is correct in general terms,

Your Honor. Basically, what has been produced to us is

user-facing data through an Access Your Account tool, for the

most part.

Now, I want you to know that we have reviewed all of the plaintiffs' data with more than one pass-through. We've done targeted searches. We've had 18 people, and more at times, going through the documents. So we're pretty familiar with what's there.

There are two problems that we have. The first is that Your Honor ordered us last -- two weeks ago to discuss

precisely what has been produced and precisely what is the data 1 that is being withheld. 2 And we -- in the course of our meet-and-confer sessions, 3 Facebook did not identify the examples that they put in their 4 5 statement. We didn't discuss those. So once again, we are getting information the first time in the statement. 6 And it would have been better if we had discussed it, 7 because when we look at those documents -- we've looked at them 8 before -- they are not what we're seeking. And the reason that 9 they're not -- and if you look, there's an example of one of 10 11 them they gave us. The content is missing. So there's an event that says one of the users went to a website, but the 12 content of what they did on the site is stripped away. 13 And our experts say, you know, what did you put in your 14 15 shopping cart? What did you access? How long were you on it? 16 And that data is also married to GPS data --THE COURT: Okay. I have the statement --17 MS. WEAVER: Yeah. 18 THE COURT: -- in front of me. 19 20 MS. WEAVER: Yes. 21 THE COURT: Can you put me to the page and the Bates number? 22 The Bates number of the document -- hang 23 MS. WEAVER:

25 **THE COURT:** Well, first, the page of the statement so

24

on.

```
I know where to go.
 1
              MS. WEAVER: That is going to be harder for me.
 2
     I think it's page 6. The Bates number -- and I'm going to
 3
     ask -- Anne, if you can help me, it's 01037245.
 4
              THE COURT: Don't see that. It's redacted
 5
     information?
 6
              MS. WEAVER: Some of the information was redacted,
 7
     yes. But this information we can discuss in the hearing, if
 8
     that is --
 9
              THE COURT: No, no. I understand. We can -- I'm not
10
11
    worried --
12
              MS. WEAVER: Yeah.
              THE COURT: -- about that.
13
          I'm just trying to find it. I don't see it.
14
              MS. WEAVER: Yeah. Hang on just a moment.
15
16
              THE COURT: Maybe the sentence at the first page of
17
     the --
              MS. WEAVER: Yeah, I'm actually looking -- I
18
19
     apologize.
                I'm looking for the actual statement. I have too
20
     many things open on my laptop.
21
          But for all of the documents that they've identified,
     Your Honor, these are PDFs that reflect some activity.
22
              THE COURT: I just want to start with -- I want to
23
     start with --
24
25
              MS. WEAVER: Fine. Okay. So if you go to page 5 of
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the statement and if we look at, for example, where it says
 1
     "Ms. Tutt reviewed content on Amtrak.com," it doesn't tell us
 2
     what the content is or it doesn't tell us --
 3
              THE COURT: Okay. Or the --
 4
 5
              MS. WEAVER: -- what they did.
              THE COURT: -- other one, that Ms. Tutt viewed content
 6
 7
     on a news site and --
              MS. WEAVER: Right. And it doesn't --
 8
              THE COURT: -- tell you what the content is.
 9
              MS. WEAVER: -- tell us what they do.
10
11
              THE COURT: Let me ask Facebook.
12
          Do you have that content?
              MR. SNYDER: Mr. Falconer, I think, will address this.
13
              MR. FALCONER: Good morning, Your Honor.
14
     Falconer for Facebook.
15
16
          Our understanding is there is some machine-readable data
     in some cases that might reflect the off-Facebook activity that
17
18
    Ms. Weaver is describing in a kind of raw, disaggregated way.
19
     That information is not associated with the plaintiff's account
     in the way that the user-created, user-shared content and
20
21
     information is associated with a user account.
          And so I hear -- I don't know -- confusion and frustration
22
     from Ms. Weaver that they feel like they don't understand what
23
     we've produced.
24
25
          The Court ordered us to, you know, be as clear as we can
```

on named plaintiffs' data, what has been produced and what has been withheld. And what we've tried to do is say that we've produced all content information that the plaintiffs share on Facebook and then some of the other categories of information that we identified in our statement; so device information, geolocation information, certain other information that is associated with their account. And we have been -- I think we've tried to be clear; and if we failed in this, we apologize.

There is other -- there's Facebook-generated information, information generated by third parties, information received from third parties. We have not represented that that is comprehensively included in our production.

What we have produced are Facebook analytics, third-party data, off-Facebook activity, anything like that that is associated with a user's account.

And so that's -- I think the point of departure between the parties right now is maybe the level of generality with which we have described what we have not produced. But that's -- we've tried to be as clear about the, sort of, large buckets that are not included in the named plaintiff data we've produced to date.

THE COURT: So, for example, when you say Ms. Weaver said, as you said, that the plaintiff viewed content on Amtrak.com, are you saying you don't have any way of

```
identifying what that content is that she viewed at that
 1
    particular time, even though you were able to say she viewed
 2
     that website at that time?
 3
              MR. FALCONER: I think for an individual plaintiff on
 4
 5
     an individual website, if it was just that question -- could we
 6
     tell for one of the named plaintiffs what specific content she
 7
     viewed on the Amtrak website? -- if it was, you know, ten years
     ago or seven years ago, probably not. If it was a year ago,
 8
            That data may or may not have been associated with --
 9
     maybe.
10
              THE COURT: Well, if it was this year --
11
              MR. FALCONER: Yeah.
              THE COURT: -- with that particular --
12
              MR. FALCONER: Sure.
13
14
              THE COURT: -- data this year.
              MR. FALCONER: The answer is it's possible.
15
    be some website-specific data about that named plaintiff; there
16
17
     may not be. There's some --
18
              THE COURT: Okay. And so you haven't searched for it,
19
     or you're withholding it, or -- I quess, why hasn't it been
20
    produced?
21
              MR. FALCONER: So as we understood the Court's
22
     mandate or, sort of, the Court's --
23
              THE COURT: No, no, no. I'm just asking.
              MR. FALCONER:
                             Oh.
24
25
              THE COURT: I'm just asking.
```

MR. FALCONER: Because the reason for that is that just to find it for one named plaintiff would be like a multiweek endeavor, if not longer. And the reason for that is that -- let's take the Amtrak example.

With this off-Facebook activity data, the tables and the database where the data is stored, you know, they've been explained to us like each one of them is a book. And the book is organized by topic. The topic that the book is organized by is the advertiser. It's Amtrak; it's not the named plaintiff.

So for every Facebook advertiser there's a book. Right? There's a table that has some data for advertisement, website activity, that kind of thing.

So to gather the information for one named plaintiff on Amtrak, that, we could probably do. To gather the data for one named plaintiff on every advertiser on every off-Facebook activity that has ever happened, just for one named plaintiff, we have to go into each of those books individually and look for that one named plaintiff, and then we'd have to do it for each of the other 23 named plaintiffs.

So that's the reason why we have not undergone that to date.

THE COURT: I understand that. So have you identified every instance that you have that the plaintiff viewed content on some website, whatever it is?

MR. FALCONER: Every instance where Facebook has been

able to associate that off-Facebook activity with a named 1 plaintiff's account. Sometimes they can't make the connection. 2 But where it's connected, we've identified it. That's included in the production. 4

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THE COURT: I assume that for this privacy case -right? -- some content is obviously more private than other content and the plaintiffs may not necessarily need or want. They need exemplars. Right? And there is a standing argument that you guys are maintaining that they have to defeat and damages and all that. There are particular instances. Right? So there may be particular instances where you then have to go do that.

In other words, if it's the data that was shared, which is sort of at the heart of the case, you're probably going to have to do some work on that. Whether it's every instance, probably not; but certainly certain instances.

Now, plaintiffs, it sounds like, have a template of where to start. It may not be Amtrak, but it may be the next one there. Right?

MR. FALCONER: Your Honor, could I be heard on that?

MS. WEAVER: Well, may I --

MR. FALCONER: Or, go ahead.

MS. WEAVER: I would like to respond.

So what we're talking about right now and what they've produced is, there's a tool so users can download data.

even in what they're downloading, there is content missing.

But there's another whole bucket of data that they haven't identified to us that is responsive, and that's the first step. We need the identification of the fields of the data that they collect through their third-party relationships, whether it's apps or websites, et cetera. And it is this database that Facebook searches using algorithms to target the users.

What they've given us is sort of the window dressing of the platform activity, and I've identified for you that something is missing even from that.

But there is -- and, Your Honor, we've talked to our experts; and maybe it's better to have experts talk or put in a declaration because I can tell you, their position will be that this is, quote/unquote, not associated with the users but that doesn't make sense.

There is an event ID, because the reason Facebook is collecting it in the first place is to target people with the data. So there is a way to go back and find -- and I agree with Mr. Falconer that this data set will be immense. And that is the scope of the case. And that's why we said only for the 24 because --

THE COURT: I'm just going to --

MS. WEAVER: Yeah.

THE COURT: -- tell you guys, I think maybe you need to think about a special master.

There's just no --1 MS. WEAVER: Yes. 2 THE COURT: I don't have the time or the patience or 3 the expertise to wade through any of this, like the nuance that 4 5 you're getting into. So I don't know what to do. MS. STEIN: Your Honor, may I be heard for a moment? 6 So I think the good news on, sort of, your reaction to 7 this is that this exercise was really about, sort of, 8 identifying categories so that we could have a conversation 9 10 about what's required in this case, because there is a whole 11 lot of information being sought here that has absolutely nothing to do with the issues that are being litigated in this 12 13 case. THE COURT: I understand that argument. I don't 14 No. 15 even know how to figure out what it is that we're even talking 16 about. 17 MS. STEIN: Right. 18 MS. WEAVER: So Facebook --19 So, Your Honor, what's being --MS. STEIN: 20 MS. WEAVER: Could I --21 -- talked about right now is what's called MS. STEIN: 22 off-Facebook activity. And that off-Facebook activity has no 23 relationship to the issues that the dismissal order said are

viable right now and that are not stayed. The order of

24

25

dismissal --

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1
              THE COURT:
                          No.
                               I read that. I read it.
                                                          Ι
    understand.
 2
              MS. STEIN:
                          Okay.
                                 Good.
 3
                         So this --
              THE COURT:
 4
 5
              MS. STEIN:
                         And so the off-Facebook activity --
              THE COURT: -- this has been previewed -- just, can I
 6
     finish?
 7
                          I'm sorry, Your Honor.
 8
              MS. STEIN:
                         Because I'm really losing patience with
 9
              THE COURT:
     this case.
10
11
          This has been previewed for a while. So what I was hoping
     to do is you guys could just tee up what that data is so I can
12
     rule if it's discoverable or not.
13
          I don't even know how to get to that point.
14
15
              MR. SNYDER: Your Honor, I think there's a very
16
     easy --
17
              MS. WEAVER: If I could, I was waiting.
          Your Honor, we would like them to identify what they're
18
19
    withholding.
                   That's it.
20
              THE COURT: But that's a chicken-and-egg problem.
     That's a chicken-and-egg problem. And I'm not sure -- and see,
21
     this is the problem I'm having. You said you've now reviewed
22
              What is missing? You've identified --
23
     it all.
              MS. WEAVER: So I'll give you examples.
24
                                                       There are no
25
     examples --
```

You did. 1 THE COURT: MS. WEAVER: Okay. 2 THE COURT: No. I'm going to let Mr. Snyder talk. 3 MS. WEAVER: Fine. 4 5 MR. SNYDER: Your Honor, I share your frustration, and I think this is very easy. 6 For example, on advertisement, we have gone, I think as 7 indicated in our statement, above and beyond the call of duty 8 because we didn't really want to just say, "We're not giving 9 you what advertisements you reviewed or ads that you've clicked 10 11 on, even though it's outside the scope of the case." This case --12 No, no. That's an argument. Please, 13 THE COURT: 14 let's try not to argue. 15 MR. SNYDER: Right. 16 THE COURT: I'm going to decide that at some point. 17 MR. SNYDER: Okay. So what I would --18 THE COURT: Just --19 (Simultaneous cross-talk.) 20 THE COURT: -- that. MR. SNYDER: What I would respectfully suggest is, we 21 22 can, Your Honor, tee it up for you in a very simple way, 23 because Judge Chhabria's order is very clear about what's in and what's out. And then each side can succinctly, 24 25 efficiently, and clearly make their arguments about what is in

```
and what's out. And it's not going to be difficult,
 1
     Your Honor. I think it's pretty clear.
 2
          I agree, on this call, people using terminology --
 3
     "on-platform," "off-platform" -- it all sounds like
 4
 5
     gobbledegook. I think there's a very clear, efficient, and
 6
     efficacious way for us to tee this up in a short statement to
 7
     Your Honor; and Your Honor can rule on it, if Your Honor wants
     more argument on it, without us having these dueling
 8
     Zoom/Hollywood Squares, you know, arguments about what's in and
 9
10
     what's out that's not going to really lead to any fair ruling.
11
              THE COURT:
                          This is what I need to ask Ms. Weaver, is:
    Do you know what it is that you want or that you believe exists
12
     that you don't have?
13
              MS. WEAVER: Yes.
14
15
              THE COURT:
                          You do.
                                   Okay.
              MS. WEAVER: More or less. We don't know what form
16
17
     they keep it in or how they keep it. It is this data set that
18
     they mine, yes.
19
                          Okay. So is there any reason why, then,
              THE COURT:
20
     we can't adjudicate that dispute as discoverability?
21
              MS. WEAVER: We can --
22
              MR. SNYDER: I think we can --
23
              MS. WEAVER: -- adjudicate that, Your Honor.
24
              THE COURT:
                          We can?
                                   Okay.
25
              MR. SNYDER: We can and we should.
```

1 THE COURT: All right. MR. SNYDER: And I think we can do it very simply 2 without a lot of drama or complication. 3 So that's what --THE COURT: 4 MR. FALCONER: Your Honor --5 THE COURT: -- I want you to do, then, on this, 6 7 I think. And, I mean, it doesn't have to be the joint letter brief, 8 whatever. I mean, it's a big issue. It kind of goes to the 9 heart of the case. So I want you to have the ability. You're 10 11 going to probably need your experts to some extent -- at least plaintiffs -- to be involved with it. 12 And I probably want four briefs. Right? Whoever goes 13 first, second, first, second, so that there's -- my guess is 14 it's not till we get to the second two briefs that we'll really 15 16 be able to meet there. That just seems to be the process that 17 we need to do. 18 So you guys work it out, how that's going to be presented. I'm not giving you any limits at all. You only have the limit 19 20 of my time and attention span. So just keep that in mind. 21 (Laughter.) 22 MS. WEAVER: And how much time, Your Honor, would you 23 like between briefs and the hearing? What kind of timing --We'll put a hearing. I'll figure it out. 24 THE COURT: 25 MS. WEAVER: Okay.

1 THE COURT: I mean, to be honest, I'm just swamped at the moment. 2 MS. WEAVER: I know. 3 THE COURT: So, but you get it to us. We'll get 4 5 through it. And we will set it for hearing. I think it's 6 important to have an oral --MR. LOESER: And, Your Honor, if I could be heard for 7 one quick minute on one --8 THE COURT: Yes. 9 MR. LOESER: This is Derek Loeser. 10 11 -- just, process point. Where we stand right now, we generally think we know 12 what's missing, and we can describe it in our briefs. 13 Facebook obviously has specific knowledge about what's 14 15 missing. And so because they haven't identified specifically 16 what they're withholding, I really think it would be improper 17 for them to argue in their brief that we haven't been specific 18 enough with what we're seeking. If that is going to be their 19 argument in their brief, then they should comply with your last 20 order, which was to identify specifically what they're 21 withholding. 22 But that's the only --23 THE COURT: Yeah. No, I understood. So that's why I'm doing four briefs. 24

And in the meantime, you should be talking and really

25

trying to narrow. It is in both sides' interest to have it

teed up as accurately as possible for me to decide. Otherwise,

I'm going to make a wrong decision one way or the other because

I won't understand.

MR. SNYDER: And, Your Honor, it's in everyone's interest to have you not be frustrated with us, which I understand and I think your frustration is well-placed, one.

Two, we want Your Honor to continue to preside over discovery; and we would, I think, lose a lot if we had to start fresh with a special master.

And mindful of that, we're going to work to narrow the issues. Maybe we can even eliminate them. And we have a lot of other work to do in the meantime. So however long Your Honor needs, we're going to obviously abide and respect that, and we're not going to, you know, ask you to turn around a ruling.

There's a lot we have to do on search terms and privilege logs and ADI protocols. So there's a ton of work for us to do while Your Honor takes -- you know, takes the time necessary to adjudicate this issue, which is ripe now.

THE COURT: Yeah. Just don't put a hearing date.

I'll pick it. So that's not a problem.

MR. LOESER: The only thing I would add to that,
Your Honor, is that we would like you to be very frustrated
with Orin all the time, but not with us.

(Laughter.) THE COURT: Well, this week has not been -- I've been frustrated a lot, and I apologize for that. Don't apologize. MR. SNYDER: It's tough times. MS. WEAVER: THE COURT: There's a lot. There's just a lot, scheduling. MR. SNYDER: Yes, Your Honor. THE COURT:

THE COURT: Okay. So, which leads me to my next point, which is the joint statement -- okay? -- which is, you all are extremely talented, experienced lawyers. If you can't figure out a way, a process for this statement to work -- it's really, actually, for you. Right? The statement is a great way of assessing where we are, what our disputes are, crystallizing it. It's for you more than me, quite honestly. And if you guys can't figure out together a way to do that, then we've got to go back to zero and start over. I mean, this should be the easy part.

So I'm not going to tell you how to do that joint statement. The only thing I'm going to tell you is I want it however -- what is -- just even one day, I give you, right, before this? I take it upon myself; I will make time to read it the night before or early the morning before. That's my only deadline. You guys work it out. Whatever works best for you and gets it. But the point is, it should really try to

crystallize it.

My own view is -- and with other cases -- is that -- at least with discovery disputes, is if you do time for a reply as opposed to changing what you've already said, that tends to work better. But I'm not ruling at all. I want you guys to come up with it. It's, frankly, below my pay grade to have to tell you how to do it.

#### (Laughter.)

MR. LOESER: We hear that loud and clear, Your Honor, and we will keep talking to Facebook about it.

We just think that it would be really useful for everyone here, including for you, if people talk about things that they put in their statements before it's submitted to the Court.

And so that's our mission in trying to come up with a better way to do this. That's what we're trying to accomplish.

THE COURT: Maybe you could do a statement, a draft, and then you talk about what's in the draft. Right? So then you know what's in there before you -- I don't know, but that would --

MR. LOESER: Yeah. We'll figure it out.

THE COURT: Yes. I know you guys can figure it out because you're all outstanding lawyers. That's why you're on this case.

Okay. So then we need to pick our next date. How about we push it out three weeks, to September 3rd?

```
I think that's the 749th day of March;
 1
              MR. LOESER:
 2
     so, sounds great.
                                (Laughter.)
 3
                           That's fine, Your Honor.
              MS. WEAVER:
 4
 5
              MR. SNYDER: And two months before Election Day,
     assuming the post offices --
 6
              MS. WEAVER: There is one.
 7
              MR. SNYDER: -- assuming the post offices and the
 8
 9
     polling places aren't shut down permanently.
10
              THE COURT: All right. Okay.
11
              MR. LOESER: Don't depress us, Orin.
              THE COURT: I apologize for having to lecture a little
12
     bit, but to be honest, you guys can do better. I know you can.
13
     I know you can. I have tremendous respect for all of you.
14
15
                         I look forward to our next conference.
          Okay.
                 Great.
16
     It'll be September 3rd at 8:30 a.m.
17
              MR. SNYDER: Thank you, Judge.
18
              MS. WEAVER: Thank you, Your Honor.
19
              MR. SNYDER: Thank you for everything you're doing.
20
     Appreciate it.
21
              THE CLERK:
                          Court's adjourned.
22
                   (Proceedings adjourned at 8:51 a.m.)
23
                                ---000---
24
25
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CERTIFICATE OF REPORTER I certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter. DATE: Saturday, August 15, 2020 ana M. Bub Ana M. Dub, CSR No. 7445, RDR, CRR, CCRR, CRG, CCG Official Reporter, U.S. District Court 

# Exhibit D

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### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION

MDL No. 2843 Case No. 18-md-02843-VC

This document relates to:

**ALL ACTIONS** 

PLAINTIFFS' OPPOSITION TO DEFENDANT FACEBOOK, INC.'S REQUEST TO ENFORCE THE PARTIAL STAY OF DISCOVERY IN PRETRIAL ORDER NO. 20 AND CROSS-MOTION TO COMPEL DISCOVERY RELATED TO REQUESTS FOR PRODUCTION NOS. 9 THROUGH 13

Judges: Hon. Vince Chhabria Hon. Jacqueline S. Corley Courtroom: 4, 17th Floor

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#### I. INTRODUCTION

Facebook does not want Plaintiffs to obtain discovery showing the full breadth of its wrongful disclosure of its users' sensitive information. Accordingly, Facebook seeks to limit discovery in this case to a single category of improperly shared information: users' activity on the Facebook platform. The sensitive information that Facebook collects and shares with third parties is much more extensive than this. It collects users' sensitive information from a variety of sources—including from third parties—then pools the information with user-posted activity and generates additional information from the full data set it accumulates. It then shares this information about users and their friends with third parties. All of this information, including who has access to it and how it is used, is relevant to Plaintiffs' claims.

As a result, there are at least three compelling reasons that Facebook's motion should be denied and Plaintiffs' cross-motion to compel production of documents responsive to Requests for Production ("RFPs") Nos. 9 through 13<sup>1</sup> should be granted.

First, contrary to Facebook's tortured reading of Pretrial Order No. 20 ("Order" or "PTO 20"), Dkt. No. 298, the Court did not limit discovery in this case only to information regarding user activity on Facebook. While that information—and Facebook's subsequent disclosure of it—is of course relevant, that is not the only type of sensitive information relevant to Plaintiffs' claims or the four categories of wrongdoing recognized by the Order.

Second, the universe of data Facebook collects and shares about users is also not limited to user activity on Facebook, but instead consists of a sea of information obtained from a wide variety of sources, including from business partners, app developers, apps, and other third parties. Indeed, as Facebook's own documents show, it collects information about users far beyond what Facebook has produced in this case. And discovery produced to date further confirms that Facebook not only collects this information, but links it to users and shares it with third parties—putting to rest Facebook's nonsensical suggestions that Plaintiffs have failed to articulate what additional evidence exists or that Facebook cannot "associate" certain data with a

<sup>&</sup>lt;sup>1</sup> For details on these RFPs, see *infra* § II.B.

user.

Third, there is no justification for Facebook's claims of undue burden. Such an argument should be accorded minimal weight in a case of this size and complexity involving a company whose business model is premised upon the collection and production of electronic information about billions of users. Facebook has come nowhere near meeting its burden of demonstrating why data regarding solely Named Plaintiffs—relative to the hundreds of millions of potential class members whose information is ultimately at issue in this case—is not proportional to the needs of the case. In fact, pursuant to the Court's recent guidance regarding streamlining Plaintiffs' discovery, Plaintiffs have reduced the number of individuals who will be class representatives to ten, down from the twenty-three. Plaintiffs only seek the discovery at issue here related to these ten Plaintiffs (for purposes of this motion, the "Named Plaintiffs.")

#### II. ARGUMENT

#### A. The Order does not limit discovery to users' platform activity.

PTO 20 does not directly address the question raised by Facebook in its motion—whether this case is limited to user activity on the Facebook platform or includes all the sensitive information about users that Facebook improperly shared with third parties. But the Order nowhere expressly limits the case to user activity. Cf. Mot.<sup>2</sup> at 1. Nor does it make sense to read the Order that way. That sort of limitation would conflict not only with claims and theories that the Order upheld, but also with the grounds on which they were allowed to proceed to discovery.

Facebook, under the guise of enforcing a discovery stay that was never issued in the first place, spends many pages straining to read the Order to limit discovery to data relating only to users' on-platform activity. This provides a misleading picture of what the Order says and inaccurately ascribes to the Court a set of internally inconsistent views.

1. The Order. The Order summarizes its understanding of Plaintiffs' claims in a two-sentence précis near the beginning: "Broadly speaking, this case is about whether Facebook

<sup>&</sup>lt;sup>2</sup> Def. Facebook, Inc,'s Opening Brief in Supp. of Its Req. to Enforce the Partial Stay of Discovery in Pretrial Order No. 20 ("Mot."), Dkt. No. 515.

acted unlawfully in making user information widely available to third parties. It's also about whether Facebook acted unlawfully in failing to do anything meaningful to prevent third parties from misusing the information they obtained." Order at 3. This description focuses on *Facebook's* unlawful disclosure of information about users and their friends to third parties—not on whether that information was originally posted, shared, or generated by users on the Facebook platform.

The Order then discusses the four categories of Facebook's wrongdoing. These categories are: (1) "[g]iving app developers access to sensitive user information"; (2) "[c]ontinued disclosure to whitelisted apps"; (3) "[s]haring sensitive user information with business partners"; and (4) "[f]ailure to restrict the use of sensitive information." Order at 6-9. These categories line up neatly with the earlier description of the action as alleging that "Facebook acted unlawfully in making user information widely available to third parties" (the first three categories) and that Facebook "fail[ed] to do anything meaningful to prevent third parties from misusing the information they obtained" (the fourth category). *Id.* at 3.

Using these four categories of wrongdoing as a framework, the Order analyzed whether Plaintiffs had standing to bring their claims and whether they stated valid claims. It ruled that Plaintiffs had standing because they alleged that their "sensitive information was disseminated to third parties in violation of their privacy." *Id.* at 14. It upheld nearly all of Plaintiffs' claims (e.g., three privacy-based tort claims under California law, a claim under the Stored Communications Act ("SCA"), a claim for breach of contract, and a claim for unjust enrichment) except to the extent they were based on the first category of wrongdoing, the disclosure of user information to app developers. *Id.* at 30-34, 38-41. It upheld in its entirety Plaintiffs' claim under the Video Privacy Protection Act ("VPPA"). *Id.* at 34-35. And it upheld Plaintiffs' claim for negligence, which was based on the fourth category of wrongdoing. *Id* at 35-36.

2. The Order's rationale. Why did the Order conclude that Plaintiffs had standing and had stated valid claims? On these points, the Order is clear. Plaintiffs had standing because "their "sensitive information was disseminated to third parties in violation of their privacy." *Id.* at 14.

This reasoning focuses not on *where* the user information was originally generated—whether on the Facebook platform or off it—but on its nature ("sensitive") and on what Facebook did with it ("disseminated" it "to third parties").

Similarly, when discussing the claims, the Order focused not on the original provenance of the information about users, but on its nature and on what Facebook did with it. So, for example, the Order ruled that:

- Plaintiffs had stated valid privacy torts because Facebook had disseminated information that was "sensitive" and as to which Plaintiffs had a reasonable expectation of privacy. *Id.* at 30-33.
- Plaintiffs had stated a claim under the Stored Communications Act because Facebook had disseminated the content of their electronic communications and had not gained their consent to do so. *Id.* at 33-34.
- Plaintiffs had stated a claim under the Video Privacy Protection Act because Facebook had disseminated "information which identifies a person as having requested or obtained specific video materials or services," *id.* at 34 (citation omitted), and Facebook qualified as a "video tape services provider" under the statute, *id.* at 35.

#### 3. "Sensitive information" is not defined by where Facebook collects that information.

The Order repeatedly notes that Facebook shares "sensitive" user information without consent. Facebook pins its argument to this one word, maintaining that the Order "defined" sensitive user information to mean only information about what users post on Facebook, Mot. at 1, or users' platform activity, Mot. at 8. But the common-sense meaning of "sensitive information" encompasses more than just what users did on the platform. Consider, for example, a Facebook user's Amazon.com order for an over-the-counter contraceptive or another user's entry of "alcoholic support group in Tower District, Fresno" into a search engine. "Sensitive information" also includes information that Facebook can *ir.fer* from on-platform information—a category of information it has not produced. (Think of the inferences that Facebook can draw from weekly photographs of a user taken at M.D. Anderson Cancer Center.) Facebook's objection that such information is categorically not "sensitive" is false.

It is true that when the Order gave examples of sensitive user information, the examples it

used concerned information generated on the Facebook platform. E.g., Order at 1, 17. Nowhere, however, did the Order  $d\epsilon$  fine or limit sensitive information to users' platform activity only. And the Order's reasoning certainly is not limited to such information. Rather, as noted above, Plaintiffs' standing to bring their claims, and the validity of many of those claims, depends on the nature rather than the provenance of the information, and on whether Facebook shared that information with third parties. And, as Plaintiffs have learned through discovery, the sensitive information about users that Facebook collects and shares with business partners and app developers includes both information originally generated outside the Facebook platform and information derived from on- and off-platform activity.

It also is farfetched for Facebook to argue that the Order rules that *all* of Plaintiffs' claims—including their federal statutory claims—rise or fall depending on whether the information that Facebook shared is "sensitive" in the sense of being embarrassing or deeply intimate. The validity of Plaintiffs' claim under the SCA, for example, does not turn on how embarrassing or intimate the information is that Facebook shared, but on whether the shared information includes the contents of an electronic communication. 18 U.S.C. § 2702(a)(1). Similarly, Plaintiffs VPPA claim turns on whether the information that Facebook shared includes "information which identifies a person as having requested or obtained specific video materials or services from a video tape service provider." *Id.* § 2710(a)(3). If, for example, Facebook collected and shared a user's video-watching queue from a different platform, that would constitute a VPPA violation.

In sum, while the Order does not explicitly address the issue posed by Facebook's motion, it certainly does not limit discovery in this case to on-platform user activity and reading it that way is inconsistent with the Court's reasoning. It is also inconsistent with statements by the Court during the motion to dismiss hearing about the breadth of user data that is relevant to Plaintiffs' claims:

For example, if – I'm a Facebook user. And, you know, I'm trying to assess the likelihood that my sensitive information got into the hands of third parties and, if so, how many third parties and, if so, what kinds of third parties. If I have a full

understanding of the third parties that had access to the information, and a full understanding of what type of information they had access to, and a full understanding of who they were, and what they – and what restrictions were placed on them, we then have a better understanding of what was likely to have happened to me.

Nov. 4, 2019 Tr. at 15:20-16:4. It is the "full understanding" referred to by the Court that Plaintiffs seek, and that Facebook refuses to allow.

Finally, this reading prevents Named Plaintiffs from discovering even the general policies and practices of Facebook governing the sharing of their sensitive information, policies and practices that are critical for this case. *See* Pretrial Order No. 30 at 2, Dkt. No. 347 ("[T]he best way to assess the merits and to determine whether class certification is appropriate is almost certainly to conduct discovery on Facebook's general practices."). Plaintiffs submit that Facebook's exclusion of this information from discovery is not what the Order intended.

4. The Order stayed claims, not discovery. Plaintiffs organized their claims into three categories: prioritized claims, prioritized consumer protection act claims alleged in the alternative, and non-prioritized claims. First Am. Consolidated Compl. ("FACC") at 317-411, Dkt. No. 257. The Order made the simple observation that "[a]ll other prioritized claims not addressed by this ruling will be stayed (effectively, relegated to non-prioritized status) and adjudicated, if necessary, at a later state in the proceedings with the other non-prioritized claims." Order at 6. Facebook's claim that this holding somehow imposed a stay of discovery is baffling. The Order does not, and does not purport to, stay discovery in any fashion.<sup>3</sup>

#### B. The discovery requests at issue and Facebook's response

The present dispute arises from five discovery requests, each of which asks for data that Facebook possesses about Named Plaintiffs, the third parties that Facebook disclosed this data to, and the types of information that was disclosed to them. *See* Ex. A, Def. Facebook, Inc.'s Resps. & Objs. to Pls.' Second Set of Reqs. for Produc. In particular, RFP No. 9 requests "[a]ll

<sup>&</sup>lt;sup>3</sup> Even if it were, the Order observed that "[o]f course, dismissal of a subset of claims with prejudice does not preclude a plaintiff from seeking revival if discovery reveals a factual basis that justifies reconsideration[.]" Order at 37 n.21 (citations omitted).

Documents relating to each of the Named Plaintiffs, including but not limited to all Content and Information collected about each of them or gained from business relationships or any other source." *Id.* RFP No. 10 asks Facebook to produce, "[f]or each of the Named Plaintiffs, Documents sufficient to show the categories of Content and Information Facebook collects, tracks, and maintains about them." *Id.* RFP Nos. 11-13 then request documents requesting Facebook to identify the third parties that were able to access this information, including the categories of data that were disclosed to them and how they accessed it. *Id.* Plaintiffs propounded these requests nearly one year ago in November 2019.

In response to these requests, Facebook produced information collected by the DYI ("Download Your Information") tool. This limited tool allows downloads of some, but not all, information relating to users' activity on the platform. And Facebook freely acknowledges that Plaintiffs can access this information themselves. *Id.* ("[A]II Facebook users are free to download their DYI file if they wish."). In addition to the DYI production, Facebook has produced an undefined category of "additional information associated with [users'] accounts" for each Plaintiff. Mot. at 6. But Facebook does not describe what the "additional information" is, likely because it is extremely limited—it consists solely of information users can access through their account in the form of their privacy settings and information reflecting user activity on Facebook. Critically, the form of production also obscures whether some of the activity was public or private. Thus, virtually all of Facebook's 850,000-page production relating to the original Named Plaintiffs in this case was already accessible to Plaintiffs and tells only part of the story.

C. Relevant sensitive information is not limited to platform activity, but also includes sensitive information Facebook derives and collects from business partners, app developers, apps, and other sources.

Facebook acknowledges that it collects and shares substantial amounts of additional sensitive information about users beyond their platform activity. *See, e.g.*, Aug. 14, 2020 Hr'g

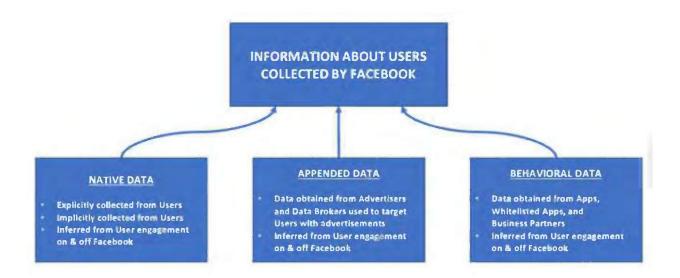
<sup>&</sup>lt;sup>4</sup> The requests use the definition of "Content and Information" from Facebook's Statement of Rights of Responsibilities—a definition that is not limited to on-platform data.

Tr. 8:10-13 ("T]here's Facebook-generated information, information generated by third parties, information received from third parties. We have not represented that that is comprehensively included in our production."); see also Mot. at 10-15 (describing off-platform activity and internal analytics it has not produced). However, Facebook contends that this other information is not relevant to this case. This is false.

User data includes, in Facebook's words, "native, appended and behavioral 1. data" that Facebook collects from business partners, apps and other activity.

Facebook identifies three general categories of information it possesses about Facebook users: Native Data, Appended Data, and Behavioral Data. See Ex. B, FB-CA-MDL-00213424-439. Native Data includes public and private information Facebook collects from a user's activity on Facebook such as a user's profile info, posts, likes, shares, and location and device information. Id. Native Data also includes a small subset of information it can infer from user activity on and off Facebook, such as user interests and behaviors. Id. Appended and Behavioral Data, on the other hand, consists of information inferred from user activity on and off Facebook. Specifically, Appended Data is user information obtained from third parties, including advertisers and data brokers, about a user's activities—e.g., auto registration, retail and credit card purchase histories, as well as other "enhanced" customer databases. Id. Behavioral Data consists of substantial information related to users including their activity within third-party applications—e.g., website browsing behavior, app installations, and purchases they make off the Facebook platform. Id. These three categories of information, and how Facebook obtains this information, are illustrated as follows:

MDL No. 2843

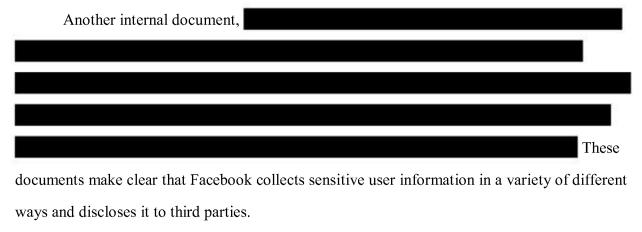


While Native Data—the only type of data Facebook has partially produced about users so far—is important for this case, so too is Appended and Behavioral Data obtained from user "engagement" on and off the platform. Moreover, Facebook connects and integrates Native, Appended and Behavioral Data generated from on-platform activity with data obtained from third parties. *See* Ex. B, FB-CA-MDL-00213424-439 (identifying Facebook's matching of data it receives directly from users with Appended Data and Behavioral Data received from third parties through ""); *id.* at FB-CA-MDL-00213424 (describing Facebook's process as instances where

Critically—and contrary to Facebook's suggestion that this data is irrelevant and duplicative of information it has already produced (Mot. at 14)—discovery confirms that Facebook shares this data with third parties. For example, a 2012 internal email between senior team members explains that "Facebook has information about users which can be helpful to applications, and which we provide to applications when we deem appropriate[.]" Ex. C, Email from Sam Lessin to Douglas Purdy (Aug. 30, 2012), at 3 (emphasis added), NBCNews (Nov. 6, 2019), <a href="https://dataviz.nbcnews.com/projects/20191104-facebook-leaked-">https://dataviz.nbcnews.com/projects/20191104-facebook-leaked-</a>

documents/assets/facebook-sealed-exhibits.pdf at 716. The email also identifies the kind of data

that Facebook shares, including (1) "[a]ggregate data about the tastes, properties, etc. of a user's friends," (2) "[d]erived data about a user/facebook's data/opinion of a user (probably location, account trust score, account age, etc.)," and (3) "[d]ata provided by third parties – information which third parties have contributed to the graph on behalf of a user." *Id*..



Facebook's insistence that it need only produce on-platform Native Data makes even less sense when considering Plaintiffs' claims. Plaintiffs' statutory and common law claims are not limited to information generated from users' activities on Facebook. For example, under the VPPA, Plaintiffs must prove that Facebook disclosed "personally identifiable information concerning any consumer" to "any person" absent written or informed consent. 18 U.S.C. § 2710(b)(2). Under the SCA, Plaintiffs must prove that Facebook "knowingly divulge[d] to any person or entity the contents of any communication" users did not intend for Facebook to divulge. 18 U.S.C. § 2702(a). The source of the information—that is, whether it was the result of on- or off- platform activity, gleaned directly from users' posts, or inferred from them—is irrelevant. Disclosure of any of this information without consent is actionable.

Similarly, Plaintiffs' Public Disclosure of Private Acts claim requires Plaintiffs to prove that Facebook disclosed a private fact about the plaintiff that is objectionable and offensive to a reasonable person. *Doe v. Gangland Prods., Inc.*, 730 F.3d 946, 958 (9th Cir. 2013). Likewise, Plaintiffs' Intrusion into Private Affairs claim requires Plaintiffs to prove an intrusion by Facebook into a private matter that is highly offensive to a reasonable person. *Shulman v. Grp. W. Prods., Inc.*, 18 Cal.4th 200, 231 (1998). In order to prove these claims, Plaintiffs must

ascertain the private facts about them that Facebook is collecting and disclosing, whether they originate from platform activity or not.

Across many claims, the Order sustained Plaintiffs' allegations about Facebook's undisclosed data reciprocity programs with business partners. Plaintiffs are thus entitled to know what sensitive user data, of any type or source, Facebook shared with its business partners. Plaintiffs are further entitled to any data that Facebook received from its business partners in return, since the value of that data constitutes the benefit Facebook received in the transaction, a benefit that Plaintiffs are entitled to recover under, *inter alia*, the unjust enrichment claim that the Court sustained. Order at 41; *see also* Order at 8 (noting the allegation that "Facebook and its [business] partners agreed to exchange information about users' activities with each other").

Facebook notes repeatedly that targeted advertising and psychographic marketing are not part of this case. *See, e.g.*, Mot. at 9. This argument misses the point. The question is not whether Facebook should or should not have engaged in targeted advertising and psychographic marketing. The question is whether, when doing so, Facebook shared sensitive user and friend information without consent. Plaintiffs are entitled to obtain the discovery necessary to substantiate the allegation that improper sharing has occurred in the context of these activities.

## 2. Internal documents confirm that Facebook's description of data "associated" with users is misleading.

Facebook claims it has produced all data it possesses that is "associated" with Named Plaintiffs. That is, while it generated and collected reams of data about Named Plaintiffs, Facebook claims that most of that data, including Appended and Behavioral Data, is anonymized and cannot be connected to Named Plaintiffs. This is false.

Facebook explains that Appended and Behavioral Data cannot be associated with Plaintiffs' Facebook accounts because such data is "disassociated from the user's ID within 90

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<sup>&</sup>lt;sup>5</sup> Facebook's position blocking discovery of what it possesses and shares is in tension with Facebook's own discovery requests to Named Plaintiffs. Facebook's Interrogatory No. 8 asks Plaintiffs to "Identify all entities other than Cambridge Analytica that You believe have "misused sensitive information from Your Facebook Account." But Facebook itself will not identify with whom it shared that sensitive information, let alone what information it possesses.

days" (Mot. at 15). But, as confirmed by internal documents, what actually happens is that Facebook replaces the User ID, or "UID," with a Random ID, or "Replacement ID" or "RID"—and *stores the connection between a UID and an RID* until users delete their accounts.<sup>6</sup> In other words, Facebook replaces the User ID with another identifier, yet the data is still directly linked to and associated with a given user. Indeed, the very purpose of collecting all of this data in the first place is to use it to target users and their friends. Facebook can readily connect any active user with Appended Data and Behavioral Data containing that user's RID<sup>7</sup> and, thus, it can be easily searched for, identified, and copied, without "multiple operations . . . to try to determine whether any data in the analysis originated from a Named Plaintiff." (f. Mot. at 15.

Similarly, Appended Data without a RID can be connected to active users through "[h]ashed data matching." *See* Ex. B. "Hashed data matching" is the process of matching different data sets through the hash values of unique identifiers. For instance, when an advertiser uploads a spreadsheet of Custom Audience data including hashed email addresses, Facebook can match this data to its users through the hashed email address field.

Thus, it simply is untrue that it would be "nearly impossible" to produce the "disassociated" data in this case for Named Plaintiffs. Mot. at 15. Facebook clearly has the ability to connect Named Plaintiffs' user information through RIDs and hashed data matching, and should be ordered to do so in response to RFP Nos. 9-13.

## D. Facebook has not established that the burden of producing the data relating to ten Plaintiffs is disproportional to the needs of this case.

Facebook also suggests that "the burdens of locating the additional information Plaintiffs seek would far exceed the needs of the case." Mot. at 12. But the burden associated with producing the requested information is not undue; it is proportional to the needs of this complex

<sup>&</sup>lt;sup>6</sup> Ex. E, PwC\_CPUP\_FB00030737-738.

<sup>7</sup> Id. at PwC\_CPUP\_FB00030738

case. In assessing proportionality, Federal Rule of Civil Procedure 26 directs consideration of "the importance of the issues at stake in the action, the amount in controversy, the parties' relative access to relevant information, the parties' resources, the importance of the discovery in resolving the issues, and whether the burden or expense of the proposed discovery outweighs its likely benefit." Fed. R. Civ. P. 26(b)(1). Helpfully, Judge Chhabria provided further guidance at the March 5, 2020 Case Management Conference, stating:

I am concerned that Facebook has, you know, often made statements reflecting an unduly narrow view of what should be turned over to the Plaintiffs. And, you know, this is a big case. I mean, there is often a lot of talk about proportionality and whatnot. This is a big case. It is a significant issue. You know, and there is -- this is not the type of case where we are going to be saying: Well, that might end up -- that effort might end up uncovering some relevant information; but, you know, it is just too expensive or difficult, and so we are not going to make Facebook do it. This is really not one of those cases where that is very -- that type of argument is likely to carry the day. You know, and, as I have said a number of times, you know, the best way to figure out what happened as it relates to the claims that are going forward now is to -- for Facebook to produce all information, all documents about the practices associated with giving third parties access to friends' information and friends' of friends information.

Tr. at 28:25-29:18. Judge Chhabria's observations regarding the size of this case remain on point. The proposed class period extends from 2007 to the present, the potential class members number in the hundreds of millions, and the third parties with whom Facebook shared user data appear to number in the tens of thousands. In that context, Plaintiffs' request for the data concerning ten individual users seems not only proportional to the needs of the case but modest.

Furthermore, Facebook's claims of burden are unsupported. "[T]he party opposing discovery has the burden of showing that discovery should not be allowed, and also has the burden of clarifying, explaining and supporting its objections with competent evidence." *Harris v. Best Buy Stores, L.P.*, No. 3:15-cv-00657-HSG (KAW), 2016 WL 6024556, at \*1 (N.D. Cal. Oct. 14, 2016) (quoting *La. Pac. Corp. v. Money Mkt. 1 Institutional Inv. Dealer*, 285 F.R.D. 481, 485 (N.D. Cal. 2012)). A party claiming undue burden or expense "ordinarily has far better information—perhaps the only information—with respect to that part of the determination." Fed. R. Civ. P. 26(b)(1) advisory committee's note (2015). Therefore, the "party claiming that

discovery imposes an undue burden must 'allege specific facts which indicate the nature and extent of the burden, usually by affidavit or other reliable evidence." *Sullivan v. Personalized Media Commc'ns, LLC*, No. 16-MC-80183-MEJ, 2016 WL 5109994, at \*3 (N.D. Cal. Sept. 21, 2016) (quoting *Nationstar Mortg., LLC v. Flamingo Trails No. 7 Landscape Maint. Ass'n*, No. 2:15-cv-01268-RFB-NJK, 2016 WL 4071988, at \*4 (D. Nev. July 28, 2016)). Facebook has furnished no evidentiary support for its objections of undue burden and its objections should be overruled.

Plaintiffs emphasize that they are seeking discovery about *ten Named Plaint*, *fs*—not millions, not thousands, and not hundreds of users. Based on the information Plaintiffs obtain about themselves, and about Facebook's general practices and procedures, they will seek to prove their class claims. Facebook's contention that Plaintiffs are not even entitled to obtain in discovery the evidence necessary to show what Facebook collects about them, and with whom it shares the information is impossible to square with Facebook's basic discovery obligations under the Federal Rules.

#### III. CONCLUSION

For the reasons set forth above, Plaintiffs respectfully request that the Court deny Facebook's motion to impose a discovery stay and grant Plaintiffs' motion to compel discovery responsive to Requests for Production Nos. 9 through 13.

<sup>&</sup>lt;sup>8</sup> See also SPS Techs., LLC v. Briles Aerospace, Inc., No. CV 18-9536 MWF (ASx), 2020 WL 4341717, at \*2-3 (C.D. Cal. June 25, 2020) (overruling objection to requests for production of documents and noting that the party resisting discovery must describe "in specific detail, how each Request is overly broad and unduly burdensome by submitting affidavits or other evidence describing the nature of the burden"); Polaris Innovations Ltd. v. Kingston Tech. Co., No. CV1600300CJCRAOX, 2017 WL 3275615, at \*6 (C.D. Cal. Feb. 14, 2017) (court grants motion to compel production of documents by defendant Kingston in part because "[r]egarding its assertion that the requests are overly burdensome, Kingston has not submitted any evidentiary declaration to support this objection.").

Dated: September 28, 2020

Respectfully submitted,

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#### ATTESTATION PURSUANT TO CIVIL LOCAL RULE 5-1(i)(3)

I, Derek W. Loeser, attest that concurrence in the filing of this document has been obtained from the other signatory. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 28th day of September, 2020, at Seattle, Washington.

/s/ Derek W. Loeser
Derek W. Loeser

#### **CERTIFICATE OF SERVICE**

I, Sarah Skaggs, hereby certify that on September 28, 2020, I electronically filed the foregoing with the Clerk of the United States District Court for the Northern District of California using the CM/ECF system, which shall send electronic notification to all counsel of record.

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#### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION.

This document relates to:

**ALL ACTIONS** 

CASE NO. 3:18-MD-02843-VC

DEFENDANT FACEBOOK, INC.'S REPLY BRIEF IN SUPPORT OF ITS REQUEST TO ENFORCE THE PARTIAL STAY OF DISCOVERY IN PRETRIAL ORDER NO. 20

Judge: Hons. Vince Chhabria and Jacqueline Scott Corley Courtroom 4, 17th Floor

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#### INTRODUCTION

The lawsuit Plaintiffs describe is not this case. This case is about <u>information sharing</u>. Specifically, it concerns sensitive information <u>that users shared with their Facebook friends</u> and that third parties allegedly accessed as a result of friend sharing, whitelisting, and integration partner agreements. Pretrial Order 20 is clear on this point, and Plaintiffs do not identify a single line in Judge Chhabria's comprehensive order, much less in their own allegations, that supports their description of the case that survived dismissal.

The Order explains on its first page: "This lawsuit . . . is about Facebook's practice of <u>sharing</u> its users' personal information with third parties." Dkt. 298 ("Order") at 1 (emphasis added). It then says that each of the four live theories concerns "<u>substantive and revealing content that users intended only for a limited audience</u> [i.e., their Facebook friends], such as their photographs, videos they made, videos they watched, their religious and political views, their relationship information, and the actual words contained in their messages." *Id.*; see also id. at 7, 13, 17. The user data relevant to those theories consists of "<u>information [users] make available to their friends on [Facebook]</u>. *Id.* at 1.

Plaintiffs do not dispute that Facebook produced all of the information the Named Plaintiffs ever shared on Facebook. These productions consist of *more than one million pages of data* and necessarily include any data Facebook shared under the live theories. But, Plaintiffs insist they are entitled to any other data that has ever crossed Facebook's servers that relates in any way to any Named Plaintiff and all derivative materials drawing on this data. Plaintiffs seek these materials even if the underlying data is not associated with any user and even if they were never shared with any third party. Plaintiffs do not even attempt to explain why they would need such data in a case concerning information *they shared on the Facebook plaiform* and that Facebook allegedly shared beyond the audience Plaintiffs intended. Instead, Plaintiffs openly admit that they seek these extraneous materials not to pursue live claims, but to resuscitate stayed and dismissed theories or to search for new ones.

Plaintiffs largely avoid the Court's instruction to brief "what the scope of discovery is based on the claims in Judge Chhabria's ruling [Pretrial Order 20]." 9/4/2020 Hr'g Tr. at 5:8-10. Instead, Plaintiffs devote the majority of their brief to side issues and seek to compel Facebook to produce all documents responsive to five RFPs that are not before the Court. The Court should disregard these diversions, conform discovery to the four operative theories, and deny Plaintiffs' motion to compel.

#### **ARGUMENT**

#### I. The stay imposed by Pretrial Order 20 includes a discovery stay.

Plaintiffs take the surprising position that Pretrial Order 20 sets virtually no bounds on the scope of discovery in this case and allows them to explore theories Judge Chhabria stayed or dismissed. <sup>1</sup>

Plaintiffs' position makes no sense. When a stay is in place, it "include[s] a stay of discovery." *Meyers v. Cty. of Sacramento*, 2020 WL 207213, at \*1 (E.D. Cal. Jan. 14, 2020). Judge Chhabria stayed all but Plaintiffs' core theories because Plaintiffs filed a 1,440-paragraph pleading. As he explained, "it seems the plaintiffs sought to identify anything Facebook has ever been reported to have done wrong . . . [and] the presence of so many disparate and vague allegations ma[de] it nearly impossible for Facebook to meaningfully respond to all of them, much less for the Court to effectively address them." Order at 5-6. In order to avoid "bogging the case down at the pleading stage for years," *id.* at 6, Judge Chhabria therefore issued an opinion regarding Plaintiffs' core allegations, without addressing most of their improperly pleaded theories, which he stayed, *id.* Judge Chhabria surely did not intend to allow discovery on hundreds of "disparate and vague allegations" that did not satisfy Rule 8. The very point of the stay was to focus this case—not to allow Plaintiffs to explore "anything Facebook has ever been reported to have done wrong" without stating cognizable claims.

Plaintiffs even suggest Pretrial Order 20 allows discovery to "reviv[e]" claims dismissed with prejudice. Opp'n at 6 n.3. To support this curious position, Plaintiffs cite a footnote in Judge Chhabria's analysis of Plaintiffs' deceit by concealment claim. *Id.* (citing Order at 37 n.21). Judge Chhabria held that Plaintiffs stated a plausible claim arising from Facebook's alleged practices concerning whitelisting and integration partners. But he held the claim did not satisfy Rule 9(b)'s heightened pleading standard with respect to friend sharing and Facebook's enforcement measures. He then said in a footnote that dismissal of a subset of the claim would not "preclude . . . plaintiff[s] from seeking revival if discovery reveals a factual basis that justified reconsideration." Order at 37 n.21. Judge Chhabria cited *WPP Luxembourg Gamma Three Sarl v. Spot Runner, Inc.*, 655 F.3d 1039, 1059 (9th Cir. 2011), which holds a plaintiff who fails to satisfy the PLRA's heightened pleading standard may potentially seek revival if other case-related discovery later allows the plaintiff to satisfy the

<sup>&</sup>lt;sup>1</sup> In addition to the discovery Plaintiffs seek from Facebook, Plaintiffs have served overbroad subpoenas on 27 third parties. These parties also require clear guidance as to the scope of discovery.

PLRA's heightened pleading standard. Judge Chhabria certainly did not intend this footnote to create a gaping hole allowing discovery on hundreds of allegations that did not survive dismissal. *See Mujica v. AirScan Inc.*, 771 F.3d 580, 593 n.7 (9th Cir. 2014) ("To the extent [earlier cases] suggest[] that courts retain discretion to permit discovery whenever a plaintiff has failed to satisfy Rule 8's plausibility standard, it is simply incompatible with *Iqbal* and *Twombly*.").

Pretrial Order 20 plainly defines the scope of discovery in defining the scope of the case.

#### II. This case is about information users share with their friends on Facebook.

A plain reading of Pretrial Order 20 explains the scope of the case Judge Chhabria allowed to move forward.<sup>2</sup> Plaintiffs say the Order describes this case as concerning any data Facebook receives or infers about users and how that data may be used to target them. To support this position Plaintiffs quote vague passages from the Order stating the case concerns "sensitive information." Plaintiffs then say Judge Chhabria did not define "sensitive" and ask the Court to interpret the term to include any data Plaintiffs believe to be personal—including information they provide to third parties, information third parties collect through cookies, public records, and even inferences Facebook draws. Opp'n at 4.

Plaintiffs disregard what Pretrial Order 20 actually says. It describes "sensitive information" to be "substantive and revealing content that users intended only for a limited audience," and clarifies that this data is "information [users] make available to their friends on [Facebook]." Order at 1. To read the ruling otherwise would expand the case far beyond what Judge Chhabria considered and would also raise a host of thorny legal questions his Order does not address.

#### A. The four live theories all concern data users shared with their Facebook friends.

As discussed, Pretrial Order 20 allows four theories of relief to move forward. Each theory concerns information users shared with their Facebook friends.

*Friend sharing*. Friend sharing was a capability through which users could share with apps information their friends posted and made available to their Facebook friends. Plaintiffs do not dispute

<sup>&</sup>lt;sup>2</sup> Plaintiffs disingenuously argue that Facebook takes an "unduly narrow" view of discovery, citing a comment Judge Chhabria made before discovery began advising Facebook to produce materials regarding "friends' information and friends' of friends information." Opp'n at 13. Facebook has now produced nearly 1.5 million pages of documents, before the parties have even reached a search term agreement, including all information the Named Plaintiffs shared with their friends and friends of their friends. Those productions also include all of the Facebook documents produced to the FTC in response to its document requests in two related investigations. They also include documents produced to a host of other government actors in related actions responsive to Plaintiffs' RFPs. In addition to these materials, Facebook proposed search terms hitting on millions of additional documents.

this. Friend sharing underlies the Cambridge Analytica events, it has been hotly litigated, and there is no dispute as to what it is about. The Order explains: "[W]hen users accessed apps on the Facebook Platform, the app developers were not merely able to obtain information about the users they were interacting with; [but] were also able to obtain any information about the users' Facebook friends that the users themselves had access to," "such as photographs, videos they watched, religious preferences, posts, and even sometimes private one-on-one messages sent through Facebook." *Id.* at 6-7.

Whitelisting. Whitelisting is an extension of friend sharing and is about the same data. *Id.* at 8.

Integration Partner Agreements. Facebook allegedly "[s]har[ed] sensitive user information with business partners," through a list of "integration partnerships," to integrate Facebook with devices, websites, and social-media platforms. *Id.* at 8-9. As with the other theories, the "sensitive user information" at issue is "substantive and revealing content that users intended only for a limited audience [i.e. their Facebook friends]." *Id.* at 1. The purpose of these agreements was to allow users to integrate their Facebook activities that they shared on Facebook with other platforms and sites.

Plaintiffs say the Order allows claims relating to integration partners to proceed as to some broader set of "sensitive information" that they find personal in nature. Opp'n at 7. Plaintiffs provide no support for this assertion; the Order describes this theory as involving the same "sensitive user data" underlying the other theories of relief. And it must. As discussed below, the Order holds that Plaintiffs demonstrated standing, a reasonable expectation of privacy, and a lack of consent only with respect to Facebook's alleged practice of sharing information users shared with their Facebook friends.

**Enforcement**. This theory relates to how Facebook enforced its data-use policies with respect to data third parties obtained through friend sharing, whitelisting, and integration partner agreements, and it concerns the same data that users shared with their Facebook friends. Order at 9.

## B. The threshold "global issues" addressed in the Order show that the actionable claims relate only to information users shared on Facebook.

Pretrial Order 20 addressed various "global issues" and holds Plaintiffs demonstrated a reasonable expectation of privacy, standing, and lack of consent only with respect to Facebook's alleged practice of sharing with third parties information users shared with their friends on Facebook.

*Expectation of privacy*. Pretrial Order 20 addresses Facebook's argument that Plaintiffs were not injured, and therefore lack standing, because they did not have a reasonable expectation of privacy

over information they share with their Facebook friends. *Id.* at 1 ("Facebook argues that people have no legitimate privacy interest in information they make available to their friends on social media."). With respect to users' privacy expectations, Pretrial Order 20 holds: "the issue of whether users have a reasonable expectation of privacy *in information they share with their social media friends* is best understood as relating to the merits, not standing." *Id.* at 10-11 n.2 (emphasis added). On the merits, the Order holds that "[w]hen you share sensitive information with a limited audience . . . you retain privacy rights and can sue someone for violating them." *Id.* at 2. It then analyzes whether users retain a reasonable expectation of privacy over information *they share with their friends*, *see id.* at 10-12, and concludes: "social media users can have their privacy invaded if sensitive information *meant only for a few dozen friends* is shared more widely," *id.* at 11.

Pretrial Order 20 is so clear that this case concerns information that users shared with their Facebook friends that it goes out of its way to say *sua sponte*: "It seems quite possible that a user whose settings allow information to be shared not only with their friends, but friends of friends, loses any expectation of privacy." *Id.* at 11 n.3. Nowhere does Pretrial Order 20 consider whether users maintain a reasonable expectation of privacy over information beyond what users share on Facebook (as Plaintiffs wrongly suggest) such as information users provide third parties, public records, information third parties obtain through cookies, or information Facebook "infers" about users.

Standing. With respect to standing, Pretrial Order 20 holds: "The alleged injury is 'concrete' largely for the reasons already discussed – if you use a company's social media platform to share sensitive information with only your friends, then you suffer a concrete injury when the company disseminates that information widely." Id. at 17. The Order goes on to say that Plaintiffs' injuries are sufficiently particularized with respect to which third parties allegedly received their data because, "[i]f, as alleged in the complaint, Facebook made users' friends only' information readily available to such a broad swath of companies . . . it is virtually inevitable that some of these companies obtained information on the named plaintiffs." Id. at 18. The Order did not hold—or even consider—whether Plaintiffs have standing to sue Facebook with respect to information users did not share on Facebook.

Consent. On the issue of consent, the Court addressed whether Plaintiffs consented to the conduct underlying their claims because they "agreed, when they signed up for their accounts, that

Facebook could disseminate their 'friends only' information in the way it has done." *Id.* at 18. Pretrial Order 20 holds that judicially noticeable materials demonstrate that a subset of users consented to sharing their "friends only" information through friend sharing, but do not establish at the pleading stage that all users consented to sharing friends-only information through friend sharing, whitelisting, and integration agreements. *Id.* at 18-29. The Order did not consider whether Plaintiffs consented to sharing information they did not share on Facebook.

The Order is clear that this case is about sensitive information users made available to their friends on Facebook and third parties allegedly accessed. Discovery must conform to these theories.

#### III. Facebook produced all data Plaintiffs shared on Facebook; no other user data is relevant.

Facebook produced more than one million pages of content and information related to the Named Plaintiffs.<sup>3</sup> Those materials include everything each Named Plaintiff ever shared on Facebook (unless they deleted it). This includes, but is not limited to, the "Download Your Information" ("DYI") file that Facebook makes available to users,<sup>4</sup> plus additional information.

Plaintiffs do not dispute that the produced materials include any data users shared with their Facebook friends (sensitive or otherwise). Yet, Plaintiffs demand that Facebook search *millions* of disaggregated data sets for any data to have ever crossed Facebook's systems relating to a Named Plaintiff and any derivative materials drawing on that data—such as data sets tracking hours of peak user activity to monitor strains on Facebook's system. They demand such materials without regard for whether they were *shared* with any third party, much less under a live theory. To support this position, Plaintiffs misinterpret a handful of Facebook documents,<sup>5</sup> but their argument boils down to the following: Facebook has documents drawing on data relating to users; therefore, Facebook must search

<sup>&</sup>lt;sup>3</sup> Since filing its opening brief, Facebook produced approximately 250,000 additional pages of information related to Named Plaintiffs who were added to the case in August.

<sup>&</sup>lt;sup>4</sup> Plaintiffs assert that the DYI data is not useful because it does not display on an item-by-item basis the audience that Plaintiffs set for each of their posts. Facebook agreed to investigate whether it could produce this data for relevant posts—bearing in mind that the request involves granular data for *more than a million pages* of activity. Facebook also reminded Plaintiffs that their accounts display this information. If Plaintiffs believe the audience set to a particular post is critical evidence for their case, they could screen-shot that information from their accounts and produce it. They could also identify particular posts to Facebook so that Facebook can produce the relevant information.

<sup>&</sup>lt;sup>5</sup> Because the Court ordered the parties not to submit declarations or evidence, 9/4/2020 Hr'g Tr. at 5:8-10, 18-22, Facebook does not here submit declarations or documents to dispute Plaintiffs' characterization of the materials they cite. If the Court is inclined to issue a ruling relying on the exhibits Plaintiffs submitted, Facebook respectfully requests permission to do so.

for and produce any materials drawing upon any data it has ever collected or created that relates in any way to a Named Plaintiff. The Court should reject this position, which largely asks Facebook to search for materials that are out of scope and consist largely of data already produced in other formats.

**Data the Named Plaintiffs did not share on Facebook is out of scope,** including public records, data Plaintiffs shared with third parties, and information created by Facebook. Facebook produced all of the information the Named Plaintiffs shared on Facebook (sensitive or otherwise). These productions necessarily include any information shared under the live theories.<sup>6</sup>

Plaintiffs say the case is about data Facebook creates and that third parties share with Facebook that is used to draw "inferences" about users. For instance, Plaintiffs may allow websites to collect data about their shopping habits through cookies. Those sites then might share this data with other parties (including Facebook) to better place the site's advertisements. As discussed above, nothing in Pretrial Order 20 supports Plaintiffs' argument that this type of data is part of this lawsuit. This would be a very different case if—as Plaintiffs say—it were about Facebook sharing information that third parties passed on to Facebook. To establish this sort of "third party data" claim, Plaintiffs would have had to allege (and prove) the nature of each of their relationships with the specific third parties at issue, the circumstances under which those third parties obtained their data, whether each individual user consented to that third party sharing data with Facebook, the circumstances under which the data was provided to Facebook, and so on. None of that is at issue here and nothing in Pretrial Order 20 suggests it is. Nor could Plaintiffs conceivably establish facts of this nature on a class-wide basis.

Plaintiffs seem to concede they demand these materials because "the very purpose of collecting all of this data . . . is to use it to target users." Opp'n at 12. As Plaintiffs admit, Pretrial Order 20 dismisses their targeted advertising theory. To the extent any advertisers received sensitive user data through friend sharing, whitelisting, or integration agreements, that user data was already produced.

<sup>&</sup>lt;sup>6</sup> To describe the data Plaintiffs believe Facebook maintains, Plaintiffs cite their Exhibit B at page 9, which was prepared by an employee in 2014 and regards Facebook's ads platform. The document does not reflect Facebook's standard terminology, nor does Facebook agree with Plaintiffs' characterization of the document. In any case, Facebook does not dispute that it receives data from third parties in connection with its ads platform and maintains internal analyses which rely on user data.

<sup>&</sup>lt;sup>7</sup> Plaintiffs walk back their position that they need discovery to pursue their dismissed "targeted advertising" and "psychographic marketing" theories. Opp'n at 11. But Plaintiffs have been arguing for a year that these theories justify their demands for every piece of information Facebook collects and infers about users and took this position in the recent joint status updates that prompted this briefing. *See* 8/13/2020 Status Update at 2-3, 9, Dkt. 495; 7/30/2020 Status Update at 3, Dkt. 484.

In any case, as discussed in its opening brief and below, Facebook actually produced the majority of data it receives from third parties in the off-Facebook Activity portion of the DYI materials.

**Data not shared through one of the four theories is out of scope.** Plaintiffs say they provide evidence that Facebook shares data beyond what users share on Facebook. Opp'n at 9-10. Even if that were true, it is not relevant to this lawsuit. The live theories concern data users shared with their Facebook friends that third parties accessed via friend sharing, whitelisting, or integration agreements.

In any case, the documents Plaintiffs cite describe Facebook's data *sources*; they say nothing about whether or how Facebook *shares* information. Of note, Plaintiffs claim their Exhibit C "confirms that Facebook shares [the data they seek] with third parties." Opp'n at 9. Exhibit C is an email outlining *hypothetical* platform capabilities—it does not discuss what data Facebook actually shared.

The integration partner theory does not entitle Plaintiffs to all data from third parties. Plaintiffs suggest Facebook must locate and produce all data points it has ever received from any third party regarding a Named Plaintiff because Facebook's integration partner agreements were built in part on "data reciprocity." Opp'n at 11. This argument is a red herring and misrepresents what "data reciprocity" means. Facebook did not, as Plaintiffs suggest, have agreements with integration partners to trade user data. Data reciprocity arrangements allowed users to post their Facebook activities to third-party platforms if the third-party platform also allowed its users to post their activities to Facebook. Plaintiffs acknowledge this. See SACC ¶ 657(g) ("Reciprocity' agreements... requir[ed] Apps that used data from Facebook to allow their users to share their data back to Facebook"); see also id. ¶¶ 239, 745. Any user data relating to that type of sharing was produced. Again, Facebook produced everything the Plaintiffs shared on Facebook. This includes any Facebook activities Plaintiffs elected to share on other platforms and any off-Facebook activities Plaintiffs elected to share on Facebook. In any event, even if some other data from integration partners existed, only data received from those partners could even possibly be relevant—not data from thousands of other third parties. 8

Plaintiffs' SCA and VPPA claims do not require additional data. Plaintiffs contend this case concerns data beyond what they shared on Facebook because Pretrial Order 20 did not dismiss

<sup>&</sup>lt;sup>8</sup> Plaintiffs concede they seek any such data to prove damages. If the Court is inclined to require broad discovery to support damages, Facebook respectfully requests the opportunity to submit briefing regarding why any such discovery should be bifurcated from liability-related discovery.

their claims under the Stored Communications Act ("SCA") and Video Privacy Protection Act ("VPPA"). Opp'n at 4-5. Plaintiffs highlight that their SCA claim turns, in part, on "whether the shared information includes the contents of an electronic communication." *Id.* at 5. But the sensitive data at issue includes "private one-on-one messages" sent on Facebook. Order at 17; *see id.* at 1, 32. Similarly, Plaintiffs' VPPA claim survived dismissal on the basis that Facebook shared "information about the videos that users received in their private [Facebook] messages and about videos they 'liked." *Id.* at 34. Plaintiffs' messages and any videos they shared or liked were produced.

The additional data Plaintiffs seek cannot even be reasonably collected.<sup>9</sup> Facebook understands Plaintiffs seek two forms of data: (i) any additional data regarding users' off-Facebook Activity provided by third parties, and (ii) any derivative materials that draw from user data. Again, these materials are not relevant to any live theory. Facebook also cannot reasonably identify them.

With respect to off-Facebook Activity, as Facebook explained in its opening brief, the produced DYI materials include the vast majority of data Facebook receives from third parties. It is not clear what else Plaintiffs seek or how it could be relevant. Any off-Facebook Activity provided by third parties that is *not* included in the DYI materials is data Facebook has not linked to a particular user or data that is so granular that it is preserved only temporarily. There is no centralized way to search for either type of data. To the extent it exists, it is organized by the third parties who provided it. Facebook would therefore need to review every data set it has received from thousands of third parties and then attempt to link to the Named Plaintiffs data points it previously did not associate with any user. Such an exercise is unlikely to be fruitful or at all useful, particularly on a class-wide basis.

Facebook also explained that, within 90 days, any user data not included in the DYI materials is disassociated from the user's ID, anonymized entirely, or deleted (depending on the nature of the data and any business reasons for retaining it). Plaintiffs argue that Facebook should *still* be able to find any derivative materials drawing from data relating to any Named Plaintiff because data disassociated from a user's ID can sometimes be linked back to the user's account. Plaintiffs' explanation of this process is oversimplified, incorrect, and ignores that much of the data they demand

<sup>&</sup>lt;sup>9</sup> Plaintiffs say Facebook did not prove undue burden because it did not submit declarations or evidence. The Court instructed the parties not to submit such materials. 9/4/2020 Tr. at 5:8-10, 18-22.

is fully anonymized or not retained at all. <sup>10</sup> The argument also misses the point. There is no way for Facebook to run a centralized search for a user's ID, random ID, or any "hashed data" identifiers across millions of data sets, which are largely used for business analytics (like scoping infrastructure needs). The only way to search these tables is to open all of them and search each to find any data relating to a particular user, whether by user ID or otherwise. The issue is opening and searching each table. <sup>11</sup>

To be clear, Facebook is not—as Plaintiffs suggest—urging the Court to issue a ruling regarding the scope of discovery based on undue burden. Facebook is highlighting that this is not a situation in which there are marginally relevant materials that are easy to sweep into an ongoing collection. The user data Plaintiffs seek has nothing to do with the four operative theories, most of it was actually produced, and any additional data would be virtually impossible to locate. If Plaintiffs are able to identify some specific type of data about user activity that is relevant to the case, Facebook will search for that data. But Plaintiffs' position that Facebook must search the entire company for every document including any data relating to a Named Plaintiff is simply not reasonable.

#### IV. The Court should deny Plaintiffs' "Cross-Motion to Compel."

Plaintiffs style their brief as a "cross-motion to compel" compliance with five RFPs and criticize Facebook for not submitting declarations and evidence about these requests. The Court should disregard this diversion, which puts the cart before the horse. The Court directed the parties to submit "no declarations," as this briefing is "just a legal question as to what the scope of discovery is based on the claims in Judge Chhabria's ruling." 9/4/2020 Tr. at 5:8-10, 18-22. Facebook told Plaintiffs it will produce materials responsive to the RFPs they identify that are in Facebook's possession and relate to the operative theories. The Court must resolve this threshold legal issue before it can consider (on a full evidentiary record) whether Facebook produced the relevant evidence responsive to specific RFPs.

#### **CONCLUSION**

The Court should enforce the stay Judge Chhabria imposed, allow discovery only on the four operative theories of relief detailed in Pretrial Order 20, and deny Plaintiffs' cross-motion to compel.

<sup>&</sup>lt;sup>10</sup> Plaintiffs' Exhibit B, which they cite on page 12 of their brief, describes the ability to reidentify data points that remain live on a user's Facebook page. This live data has already been produced.

<sup>&</sup>lt;sup>11</sup> Plaintiffs did not ease the burden of searching millions of data sets by identifying 10 Named Plaintiffs they *intend* to identify as class representatives. In any case, the other 14 Named Plaintiffs have not withdrawn their claims and have reserved their rights to proceed as class representatives.

DATE: October 8, 2020 Respectfully submitted,

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Attorneys for Defendant Facebook, Inc.

# Exhibit F

# Northern District of California

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### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION

MDL No. 2843 Case No. 18-md-02843-VC (JSC)

#### **DISCOVERY ORDER NO. 9**

(Dkt. Nos. 515, 526, 537, 548)

This MDL matter has been assigned to the undersigned for management of discovery. Now pending before the Court are the Parties' briefs concerning the proper scope of discovery related to the data Facebook accumulates about the named Plaintiffs. (Dkt. Nos. 515, 526, 537, 548.) In brief, Facebook contends that the district court's order specifically defined the data at issue as "substantive and revealing content that users intended only for a limited audience." (Dkt. No. 298.) Based on this definition, Facebook argues that for any named Plaintiff data to be relevant and discoverable, it must meet two criteria. First, the discoverable data must have arisen from user activity occurring on the Facebook platform, such as Facebook posts and sent messages. Second, the named Plaintiff must have then overtly shared such data with a limited audience, such as their friends. Facebook submits that this is the only plausible reading of the district court's order limiting Plaintiffs to four actionable categories of potential liability. Plaintiffs respond that the universe of discoverable data Facebook collects for each user is much larger and necessarily includes: (1) user activity occurring off the Facebook platform; and (2) user data that can be inferred from user activity occurring on or off the Facebook platform. A second question presented by the briefs is whether discovery may proceed on the claims the district court stayed.

After carefully considering the papers submitted by the Parties, and consulting with the district court, the Court rules that discovery is not as limited as Facebook contends. Plaintiffs correctly argue that Facebook's restrictive view of relevant discovery would exclude an enormous

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United States District Court Northern District of California

amount of information that Facebook collects and shares with third parties about Facebook's users. The district court's order (Dkt. No. 298) did not limit Plaintiffs' claims to only challenging the sharing of data Facebook collects from a user's on-platform activity; the claims also challenge Facebook's sharing of user data and alleged failure to monitor how third parties used such shared information.

Accordingly, the Court rules the discoverable user data at issue includes:

- Data collected from a user's on-platform activity;
- Data obtained from third parties regarding a user's off-platform activities; and
- Data inferred from a user's on or off-platform activity.

As for the stayed claims, and again after consulting with the district court, the Court rules that discovery is stayed as to the stayed claims. Of course, if a particular discovery request is relevant to both a stayed and non-stayed claim, then discovery is not stayed merely because the discovery request is also relevant to a stayed claim.

#### IT IS SO ORDERED.

Dated: October 29, 2020

JACQUELINE SCOTT CORLE United States Magistrate Judge

# Exhibit G

#### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION,

This document relates to:

**ALL ACTIONS** 

**MDL NO. 2843** 

CASE NO. 3:18-MD-02843-VC-JSC

HON. VINCE CHHABRIA COURTROOM 4 – 17<sup>TH</sup> FLOOR SPECIAL MASTER, DANIEL GARRIE, ESQ.

ORDER RE: PLAINTIFFS' MOTION TO COMPEL PRODUCTION OF PLAINTIFF DATA

#### INTRODUCTION

1. Pending before Special Master Garrie is Plaintiffs' Motion to Compel Production of Named Plaintiffs' Content and Information.

#### BACKGROUND

- 2. On November 25, 2019, Plaintiffs' served Requests for Production Nos. 9-13, which seek documents relating to the named Plaintiffs in this matter ("Named Plaintiffs"). See Exhibit A. In brief, Request No. 9 seeks all documents relating to each of the Named Plaintiffs; Request No. 10 seeks documents sufficient to show the categories of content and information Facebook collects, tracks, and maintains about them; and Requests Nos. 11-13 seek documents identifying third parties that were able to access information about the Named Plaintiffs. Id.
- 3. In response to Requests for Production Nos. 9-13, Facebook produced more than one million pages of individual user data it maintained relating to the Named Plaintiffs, most of which was obtained from the "Download Your Information" tool ("DYI Tool").<sup>2</sup> The data obtained from the DYI Tool is mostly limited to information pertaining to users' on platform Facebook activity. See Exhibit B (List of DYI Tool Data Fields).
- 4. Statements by Facebook's counsel during an August 14, 2020 discovery hearing indicated that Facebook maintained additional data related to the Named Plaintiffs that was not produced. See Exhibit C (8/14/2020 Discovery Hearing Transcript) at 8:10-13 ("There is other there's Facebook-generated information, information generated by third parties, information

<sup>&</sup>lt;sup>1</sup> There were originally 30 named Plaintiffs, but this has been reduced to nine named Plaintiffs.

<sup>&</sup>lt;sup>2</sup> The DYI Tool is a tool by which Facebook users can download certain pieces of information related to the user's Facebook activity and related data. A list of the types of information that can be downloaded via the DYI Tool is provided in Exhibit B.

received from third parties. We have not represented that that is comprehensively included in our production.").

- 5. Plaintiffs filed a motion last September to compel additional discovery related to Requests for Production Nos. 9-13. See Exhibit D (9/28/2020 Motion to Compel). Plaintiffs asked the Court to compel production of sensitive information Facebook derives and collects from business partners, app developers, apps, and other sources. This request included "native, appended and behavioral data" and purportedly anonymized data that could be connected to the Named Plaintiffs. Id. at 7-11.
- 6. On October 8, 2020, Facebook responded to Plaintiffs' motion to compel. See Exhibit E (Facebook Opposition to Plaintiffs' 9/28/2020 Motion to Compel). Facebook contended that all information related to the Named Plaintiffs that they did not themselves share on Facebook was outside the scope of the case; that all information not shared through one of the four theories of the case was not within the scope of the case; that Plaintiffs were not entitled to all data collected from third parties about the Named Plaintiffs; that the Stored Communications Act and Video Protection Privacy Act claims did not require the production of additional data Facebook had collected about the Named Plaintiffs; and that Facebook could not reasonably collect any of the additional information Plaintiffs sought. Id. at 6-10.
- 7. On October 29, 2020, Judge Corley issued Discovery Order No. 9, ruling "that discovery is not as limited as Facebook contends" and "the discoverable user data at issue includes: [1] Data collected from a user's on-platform activity; [2] Data obtained from third parties regarding a user's off-platform activities; and [3] Data inferred from a user's on or off-platform activity." See Exhibit F (Discovery Order No. 9) at 2.

- 8. In Discovery Order No. 11, Judge Corley provided further clarification on the discoverable user data intended to be included under Discovery Order No. 9:
  - It also contended that Plaintiffs conceded that user data not shared with or accessible to third parties is not relevant, (Dkt.No. 548 at 10), and because Facebook does not share inferred user data, the inferred user data Facebook maintains is not relevant. Facebook both collects and uses data about its users as part of its business model, including data derived from third parties. How it specifically uses this data is an open question, but if the Court were to accept Facebook's arguments about the scope of production, it would eliminate Discovery Order No. 9's third category of discovery: data inferred from a user's on or off-platform activity. What is needed now is more detail about Facebook's collection and use of user data so future discovery requests can be tailored to Plaintiffs' better understanding of the internal operations of Facebook as well the terminology it uses for describing data that is potentially responsive to Plaintiffs' discovery requests. See Exhibit G (Discovery Order No. 11) at 1.
- 9. Following Judge Corley's orders, Facebook did not produce additional documents in response to Requests for Production Nos. 9-13.
- 10. On October 6, 2021, Special Master Garrie and Judge Andler declared impasse on the issue of whether Facebook should be compelled to produce additional documents related to the Named Plaintiffs pursuant to Discovery Order No. 9.
- On October 18, 2021, Plaintiffs submitted their opening brief to Special Master Garrie on this issue. See Exhibit H. Plaintiffs argue that (a) the court has already determined the information Plaintiffs seek is relevant—whether or not Facebook claims that it has been shared; (b) whether the Named Plaintiffs' information was shared is a contested question on which Plaintiffs are entitled to evidence; (c) Facebook has failed to substantiate a disproportionate burden in identifying the data it possesses relating to nine people; and (d) Plaintiffs have made proposals to reduce the burden of production on Facebook. Id.
- 12. On October 28, 2021, Facebook submitted its Opposition to Plaintiffs' Motion to Compel Production of Named Plaintiffs' Content and Information. See Exhibit I. Facebook argues,

among other things, that (a) the scope of discovery is limited to information Facebook shared with third parties; (b) Plaintiffs are judicially estopped from seeking information that was not shared; and (c) the information Plaintiffs now seek is nonresponsive and otherwise unavailable. <u>Id.</u>

- 13. On November 2, 2021, Plaintiffs submitted their Reply in which they argue, among other things, (a) Judge Corley's orders entitle Plaintiffs to the discovery they seek; (b) Plaintiffs are entitled to probe Facebook's assertion that it has already produced all the content and information it has shared or made accessible to third parties; (c) Plaintiffs are entitled to answers to Interrogatories 16 and 17; and (d) the relief Plaintiffs are requesting is intended to lighten Facebook's burden. See Exhibit J.
- 14. Facebook subsequently objected to Plaintiffs reply claiming that Plaintiffs introduced new arguments and evidence for the first time, in violation of the Discovery Protocol.

  See Exhibit K (Facebook's Response to Plaintiffs' Objection Regarding Named Plaintiffs' Data Briefing) ("Plaintiffs sought **new relief** and introduced **twelve new documents** that Plaintiffs suddenly claim show gaps in Facebook's productions.").

#### **FINDINGS**

15. Special Master Garrie finds that Discovery Order No. 9 does not limit the scope of discoverable data related to the Named Plaintiffs to data that was shared with third parties, as Facebook contends, because Judge Corley's ruling contains no language indicating such a limitation: "Accordingly, the court rules the discoverable user data at issue includes: [1] Data collected from a user's on-platform activity; [2] Data obtained from third parties regarding a user's off-platform activities; and [3] Data inferred from a user's on or off-platform activity." See Exhibit F at 2.

- 16. Moreover, Judge Corley clarified that Facebook's interpretation of Discovery Order No. 9 is not what Judge Corley intended: "How [Facebook] specifically uses this data is an open question, but if the Court were to accept Facebook's arguments about the scope of production, it would eliminate Discovery Order No. 9's third category of discovery: data inferred from a user's on or off-platform activity." See Exhibit G at 1.
- Named Plaintiffs that was not produced in response Requests for Production Nos. 9-13. See Exhibit C at 8:10-13 ("There is other there's Facebook-generated information, information generated by third parties, information received from third parties. We have not represented that that is comprehensively included in our production."). For example, documents produced by Facebook indicate that Facebook collects data referred to as "Appended Data," including public records, auto registration data, retail purchases, and credit card purchases, all of which fall into the second category of data from Discovery Order No. 9. See Exhibit L (FB-CA-MDL-00213424). However, Facebook has not produced this data as it is not available via the DYI Tool. See Exhibit B.<sup>3</sup>
- 18. Special Master Garrie finds that Plaintiffs requested new relief (answers to Interrogatories 16-17) and introduced new evidence (exhibits C, D, E, F, H, I, and J to Plaintiffs' Reply) in their Reply brief in violation of the Discovery Protocol. Accordingly, Special Master Garrie did not consider this request for new relief or the new evidence items in reaching the findings herein.

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<sup>&</sup>lt;sup>3</sup> Facebook also appears to maintain data relating to the Named Plaintiffs' on-platform activity that has not been provided, such as inferred interest and behavior data. See Exhibit L.

#### **ORDER**

19. No later than December 3, 2021, Facebook is to provide a list of data sources that may contain information related to the Named Plaintiffs pursuant to Discovery Order No. 9. The list of data sources is to include: (1) the name of the database or data log; (2) a description of the data source's purpose and function; and (3) a description of the types of Named Plaintiff data contained in the data source.

20. No later than December 10, 2021, the parties are to meet and confer and each submit to Special Master Garrie a proposed protocol for the production of Named Plaintiffs' data from the data sources identified by Facebook.

#### IT IS SO ORDERED.

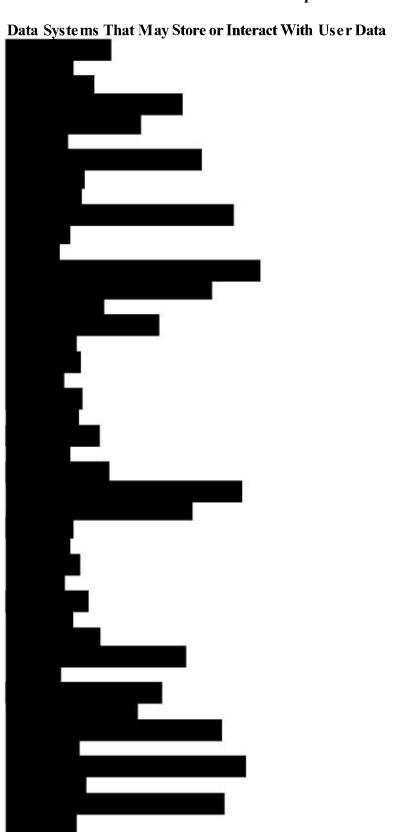
Monday, November 29, 2021

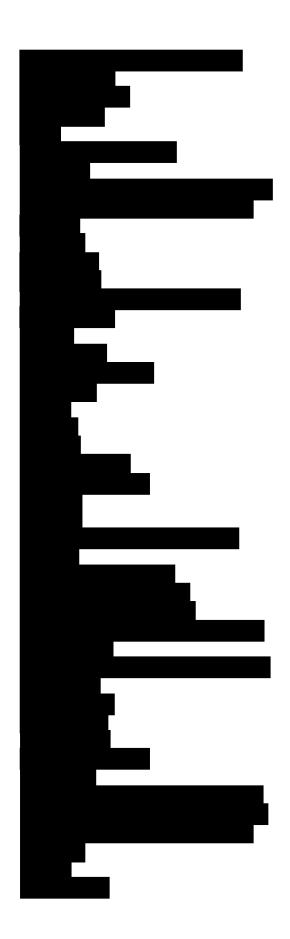
Daniel Garrie

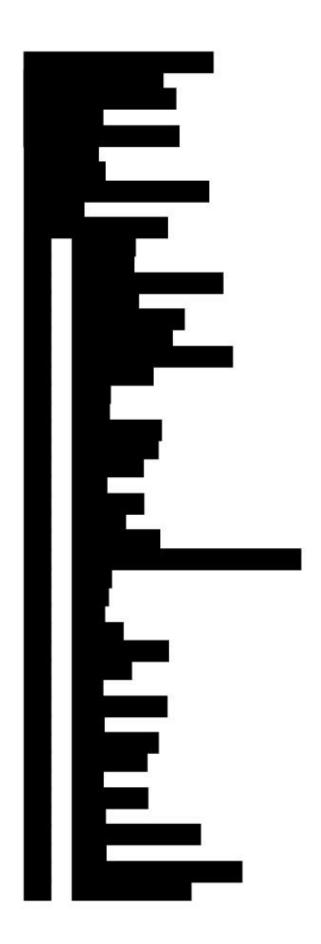
Discovery Special Master

# Exhibit H

**Exhibit A to Pope Declaration** 









# Exhibit I

1 2	UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA
3	
4	
5	IN RE: ) MDL No. 2843
6	FACEBOOK, INC. CONSUMER ) Case No. 18-md-02843- PRIVACY USER PROFILE ) VC-JSC
7	LITIGATION )
8	
9	
	HIGHLY CONFIDENTIAL
10	ATTORNEYS' EYES ONLY
11	
1.0	SPECIAL MASTER: DANIEL GARRIE
12   13	REMOTE HEARING
$egin{array}{c c} 13 &   \\ 14 &   \end{array}$	(Via Zoom Videoconference)
 15	Friday, January 14, 2022
16	
17	
18	REPORTED BY: Michelle Milan Fulmer
	CSR No. 6942, RPR, CRR, CRC
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20	
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23 24	
25	
	Page 1

- 1	
1	UNITED STATES DISTRICT COURT
2	NORTHERN DISTRICT OF CALIFORNIA
3	
4	
5	IN RE: ) MDL No. 2843
	)
6	FACEBOOK, INC. CONSUMER ) Case No. 18-md-02843-
	PRIVACY USER PROFILE ) VC-JSC
7	LITIGATION )
	)
8	
9	
10	Remote hearing taken before Michelle Milan
11	Fulmer, a Certified Shorthand Reporter for the
12	State of California, commencing at 12:08 p.m.,
13	Pacific Standard Time, Friday, January 14, 2022.
14	
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	Page 2

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5
6
    ALSO PRESENT:
7
           Michael Mann
           (Via Zoom Videoconference)
8
9
10
11
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1		I N D E X	
2	WITNESS		EXAMINATION
3	DAVID POPE		
4			PAGE
5		BY MR. GARRIE	6
6			
7			
8		EXHIBITS	
9			Page
10	Exhibit	Description	Identified
11	Exhibit A	Spreadsheet	71
12			
13			
14			
15			
16			
17			
18			
19			
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21			
22			
23			
24			
25			
			Page 5
			- 450

1	Friday, January 14, 2022
2	12:08 p.m 3:21 p.m.
3	***
4	MR. GARRIE: We're going on the record and
5	we'll get started.
6	Court reporter, Ms. Milan Fulmer.
7	
8	DAVID POPE,
9	called as a witness, having been first duly sworn by
10	the Certified Shorthand Reporter, was examined and
11	testified as follows:
12	
13	EXAMINATION
14	BY MR. GARRIE:
15	Q Okay. Good afternoon, good morning,
16	wherever you are in the world, Mr. Pope. Thank you
17	for taking time out of your busy day to answer some
18	questions.
19	I have a declaration that was submitted in
20	this case regarding I'm sure you're aware of it,
21	but just to make sure.
22	Did you submit a declaration on
23	December 10th of 2021 in connection with the
24	Facebook In Re: Facebook dispute?
25	A Yes.
	Page 6

1	Q Okay. And maybe counsel for Facebook, or I
2	can share my screen, but do you have that
3	declaration in front of you? If not, I can share it
4	just to make sure.
5	A Yeah. I do have the declaration on my
6	computer.
7	Q Okay. All right. Sounds good.
8	If you can just look at the declaration.
9	Or here, I'll share my screen so everybody can see
10	what I'm looking at.
11	So if you see here the declaration, in this
12	declaration it says "My team," in Paragraph 3 right
13	here, to inventory all data systems within Facebook
14	and understand which of them retain user data and
15	you spent a year working.
16	Do you see where I am?
17	A Yes. I see that.
18	Q Okay. And then you provided a list
19	attached as Exhibit A.
20	A Uh-huh.
21	Q Okay. All you see right now is the pdf;
22	right?
23	A That's correct.
24	Q Okay. So I have a high-level question
25	before we
	Page 7

1 Over the course of the year, right, you collect -- what exactly -- because I don't want to 2 ask you for things that you don't have or that I 3 don't understand. 4 So if you could just tell me sort of at a 6 high level, particularly, you said working with -like what did you actually collect and identify when you got these data systems? So that way I'm not 8 9 asking you questions for things that you're, like, "I didn't do"? 10 11 Α Yeah. Yeah. 12 So, well, the way the program operated was 13 we basically asked, you 16 know, some simple questions about 20 And then from that point Page 8

L	So let's say
Q	When you asked
A	And
	Yeah. Go ahead.
Q	I guess when you asked them questions, so
like	because if you look here, right, in
Exhibit	A, and we'll go through it in a lot more
detail,	there's 149 of these systems.
	So you would email somebody and they would
send yo	ou did you what kind of questions did
_	t them? Like what because I don't want to
_	to do work you haven't done or for
_	•
	ation you don't have. I think if I understand
_	ou have, it may streamline the questions
process	s for the systems.
A	Yeah. It would be basically, you know, a
simple	description of their system.
	Page 9

1 Things of this nature. You know, I don't have -- it's been some time since I've directly worked with that. I 4 5 started the program and the team, you know, took it forward and I haven't been reviewing the current 6 7 but they're of that nature. Fairly high-level questions. 9 10 So then So, you know, what you -- like does it -- so for each of 11 12 these systems, you -- I'm just trying to understand, 13 like, like, what in- -- like, for example, so 15 for all of -- I'll give you an example. 16 For the systems, and we'll start with one of them just as an example, right, and I'll scroll 17 down here to -- and I received a spreadsheet with a 18 letter that broke down what they were. 19 Uh-huh. 20 A 21 And so if you look at the it says it says files with salted and hashed Facebook users' 22 23 PII are stored in this data store. The data store 24 is used by the

Page 10

1	
2	My first basic question, you may not know
3	the answer to this, would you know if this user data
4	is already contained in the social graph?
5	To me it seems like it's already there.
6	It's redundant.
7	Is that would you know the answer to
8	that question?
9	A No. I wouldn't know.
10	Q Okay. Would you be able to tell me like
11	why was this system identified, the for having
12	user data? Like, is it
13	A
16	Q Well, before we
17	A Yeah. Go ahead.
18	Q No. Go ahead. Sorry.
19	A No. I was just going to say, you know, a
20	
	Page 11

1	Q I mean, did you find out if any of the data
2	in these systems, the user data you identify is
3	actually is it shared with because, I mean,
4	for some of these, you know, is the data being
5	shared with third parties or and, I mean, whether
6	it's readable or not readable, I don't care.
7	What I want to know is, is the data in the
8	system shared with third parties, like
9	A Yeah. I don't know.
LO	Q For all of them or just that one?
L1	A So for some I will know because I have more
L 2	familiarity with them.
L3	This one I'm not familiar with directly;
L4	but some that I have worked with, I would be able
L5	to I have a little more depth of knowledge and I
L 6	could.
L 7	Q All right. And then my other question is,
L 8	is the data and these are the two real questions.
L 9	Is the data that's collected and the user
20	data, being very clear, the user data collected made
21	accessible to other parts of Facebook that then put
22	it into a product?
23	And I'm not saying for a particular I'm
24	just going to give you an illustrative example, and
25	I'm not saying this actually happened for the
	Page 12
	$_{-}$

1	record. It's just to illustrate an idea; okay? I
2	have no personal knowledge.
3	A All right.
4	Q But this data falls goes into your
5	system, then it outputs to another system at
6	Facebook that then uses some of that output and
7	provides it to an off-platform ad network or
8	something; right? Is the data being made accessible
9	to another platform offering or solution that
10	Facebook shared off, you know, with a third party,
11	whether it's an ad network, whether it's with
12	whoever? I mean, maybe ad network is a very touchy
13	subject. Probably shouldn't use that one.
14	But the idea is that it's shared off
15	platform, but the data goes into the system and then
16	that data is processed or something's done with it
17	and then shared with another entity maybe likely on
18	this list, I would assume, that then outputs it.
19	A
24	Q Okay.
25	A
	Page 13

1	
2	
5	Q Okay. Fine.
6	So I guess for the systems we do know,
7	right, so we'll go through the list fairly quickly.
8	I mean, for you know, the
9	description is the delivery flow, which I have no
10	Do you have any idea what that means?
11	A This is used in the delivery flow for
12	targeting, ranking features.
13	Q Is that to customers? Is that an internal
14	tool that you're using to manage in the ad network?
15	A Yeah. I don't know, actually. I'm not
16	familiar with this system or kind of like the
17	relationship that they're describing between
18	and so forth. Yeah, I haven't worked in
19	this area to know what that means more than what's
20	written.
21	Q Just so I understand, when it says "the
22	social system," is that the system?
23	A I don't know. Yeah. Sorry.
24	Q Okay. So do you know who
25	But you have
	Page 14
	1450 11

these s	ystems that could theoretically if I	
think -	- and that's a big if, in caps if I th	nink
it's ne	cessary or appropriate to get the addition	onal
informa	tion if this is used or shared.	
	And just so I'm clear here, their user	data
would g	o into this system that and I'm not su	ıre.
Would t	his system then share the data off platfo	orm?
А	I don't know.	
Q	You don't know?	
А	Yeah. I'm not sure how the data is	
process	eed.	
	Just, again, kind of	
	Very good	
Q A	Very good.	
	Voah	
Q	Yeah.	
	Page	15

1	A Right.
2	Q
3	A Right.
4	Q In this list, we'll go through each of
5	them, but if there are specific ones you know more
6	about, please tell me. Because I read about
7	and let's be clear. All I'm interested in
8	is really if the data is shared off of the platform
9	or made accessible off of the platform. And when I
10	read the description of the says it's a
11	real-time service that performs a join, which I
12	assume you mean a database join, between different
13	event streams, which I interpret to be I'm not sure
14	what, and features. And it says the core but the
15	part of that that's kind of confusing, it says core
16	of the training data preparation flow, which to me
17	says is this an internal tool that you're just using
18	to optimize for the ad network that you then
19	aggregate out?
20	A Yeah. You know, I can I don't want to
21	speculate. I don't actually know the details.
22	I think there are some hints there when
23	they say like feature and so forth, but I don't want
24	to infer because I I don't actually work with
25	that system and don't have knowledge of it.

1	Q Okay. I appreciate it.
2	But you, again, have the spreadsheet
3	response or the form response you got for that
4	because
5	A Right. We do have the point of contact, as
6	you mentioned, for that system.
7	Q Yeah. All right.
8	Then for database, I think this is
9	a MySQL database, it's an internal system, but is
LO	that correct? I mean, what is it doing because
L1	A I mean, again, you know, unfortunately, I
L2	guess, my knowledge is
L3	Q No. It's okay. I much as crazy as this
L 4	may sound, I much appreciate your repeating yourself
L 5	and you can just say, "Same answer as last time," if
L6	you want to streamline it and it won't offend or
L 7	upset me at all.
L 8	A Yeah.
L 9	Q All I'm trying to do is figure out. You
20	submitted the declaration. So I wanted to check
21	with you.
22	You don't have any further information
23	available, right, that you could reference to check
24	and give answers?
25	A Yeah. Not at hand. Certainly, you know,
	Page 17

1	this knowledge exists within the company, but it's
2	not essentially, you know, a part of the work that I
3	did or that I have access to.
4	Q I got it.
5	A Yeah.
6	Q Because it says and the reason why I
7	ask, it says but also other critical consumers of
8	the .
9	So, again, is this user data being shared
10	or aggregated out of the Facebook platform into
11	third parties or is this just Facebook's internal
12	systems that it's using?
13	A Yeah.
14	Q Well, maybe
15	A I don't
16	Q Well, have you had a chance to look at all
17	149 systems?
18	A Yeah. I mean, I do like, if you want me
19	to call out a particular one, 📰 is the one that
2 0	I probably have the most knowledge of and
21	understanding.
22	Q And is?
23	A Yeah. It's the
24	Q I'm just trying to scroll down.
25	A I think you passed it. I think I saw it go
	Page 18

1	by.	
2	Q	Sorry. I was using my finger. One sec.
3		Where would it be?
4	A	It's a little bit higher.
5	Q	
6	A	
7	Q	There it is.
8	A	There it is above.
9	Q	There it is. Okay.
10	A	Kinda on the fold of the page. Yeah. It's
11	on the l	ist, yeah.
12	Q	So the says is a team within
13		dedicated to the performance and delivery of
14	media co	entent of all Facebook products.
15		How does user data play into that?
16	A	So the way this works is
22	Q	Yeah.
23	A	
25	Q	Yeah. It
		Page 19

1	
2	A Yeah. Exactly.
3	So, you know,
10	Q Right. And then
11	A And so when
12	Q Go ahead. Keep going.
13	A So then
17	Q And so then
	My question is, do you know
22	what my what's it called? Download. I forget
23	what the tool is called.
24	A Download your information.
25	Q DYI. Sorry. Yeah.
	Page 20

1	Is all of the information in a DYI the same
2	information that's available in the <b>the</b> because
3	those are my pictures and the DYI, as I understand
4	it, has those photos? Is that correct?
5	A I don't know. I don't know. I don't
6	actually know how DYI operates or the systems that
7	it covers.
8	But for the again,
11	Q Yeah. Yeah.
12	A That
13	Q It's
14	A is deleted.
15	Q
	. It's
17	not
18	A Yeah.
19	Q user data, per se, that's being shared
20	off platform to a third party. It's being made
21	accessible to my friend in Tel Aviv so that they can
22	access the picture.
23	A Right.
24	Q Does any other third parties have access to
25	the data or is it just end users?
	Page 21

1	
1	A Well
2	Q Like does Facebook make data
3	A Yeah. No. It's available publicly. So,
4	you know, I guess there's not a special channel that
5	I'm aware of that would be for that. But this is
6	really, again, kind of outside of my area of
7	expertise. The knowledge I have of 🔀 is the
8	public-facing
9	Q Okay.
10	A use
11	Q But it's used
12	A like in Tel Aviv as you described.
13	Q
16	A Uh-huh.
17	Q
22	Q All right. So then how about
23	Nothing? Same as before?
24	A Yeah. Same as before.
25	Q When they said user data comes into it,
	Page 22
	i age 22

1	nobody the problem is is the plan is
2	So this looks like a new system. Is that
3	an accurate
4	A I don't know the age of the system.
5	Q Because it says
9	All right. And then you know,
10	again, was created the part I'm interested in, it
11	says it was created and I guess this was provided
12	to you, so you're sure. But it says it was created
13	in order to migrate from which I'm
14	pretty sure I know what they're talking about, but
15	let's just assume on the MySQL with storage
16	platform that Facebook uses.
17	A Yeah. I know a little bit
18	Q That's an internal.
19	A about that one. Yeah.
20	Q So that's an internal system; right?
21	A It
25	Q So if it's just
	Page 23

1	A That application.	
2	Q Yeah. So only Facebook internal services	
3	have access to the application layer or do	
4	third-party applications have access to it as well?	
5	A No. That one is actually	
6	Q Which one is right?	
7	A So only internal applications and products	1
8	have access to this system.	
9	Q All right.	
10	A And what I just want to be clear about	
11	that.	
12	So	
15	Q Yeah.	
15 16	Q Yeah.  A That does not that has access to this.	
16	A That does not that has access to this.	
16	A That does not that has access to this.	l
16 17	A That does not that has access to this. But beyond that, you know,	
16 17 19	A That does not that has access to this.  But beyond that, you know,  Q Got it.	l
16 17 19 20	A That does not that has access to this.  But beyond that, you know,  Q Got it.  And then for what user data is	
16 17 19 20 21	A That does not that has access to this.  But beyond that, you know,  Q Got it.  And then for what user data is going in through	1
16 17 19 20 21	A That does not that has access to this.  But beyond that, you know,  Q Got it.  And then for what user data is going in through  A Yeah. I have a little bit of knowledge	
16 17 19 20 21 22 23	A That does not that has access to this.  But beyond that, you know,  Q Got it.  And then for what user data is going in through  A Yeah. I have a little bit of knowledge there.	

1	data is that you could schedule a job with user data
2	in the description.
3	Q But that's, again, for operations internal
4	to Facebook
5	A It's completely internal.
6	Q or is it
7	A No. It's completely internal.
8	Q All right. So then
9	So you're talking about you could schedule
LO	an internal job for whatever on a database cleanup.
L1	The will run on the database and then it
L2	will report you'll schedule a database cleanup.
L3	Whatever the activity is, that runs only internal to
L4	Facebook; right?
L 5	A That's correct.
L6	Q Yeah.
L 7	A I do have knowledge of to that
L 8	degree. That's the pretty much the depth that I
L 9	have.
20	Q That's all I need to know, honestly. So
21	that's perfect.
22	
23	A Yeah. I'm not aware of that.
24	Q Again, inventory estimation. I assume
25	that's an internal tool, but I guess you're not the
	Page 25

1	right person to ask, but I didn't because it says
2	it's mainly used by advertisers trying to target
3	their ads to the right audience. So I didn't get
4	how user data fed into that and if it's being
5	made access
6	Is being made accessible to third
7	parties, the data in there? It's user data really
8	what I'm interested in being made accessible, but I
9	guess you may not be the right person for that one.
10	A Yeah.
11	Q For I I heard a lot about
12	actually very recently. But
13	does that have user data?
14	A By the fact that it's on this list,
16	And just to make a qualification there,
17	this is where
21	Q That would have been a good thing to put in
22	your declaration,
24	So you
	Page 26

1	A
4	Q I got it. I get the policy driving piece
5	of it.
6	And then for and then just to go
7	back up really quickly just to run through the As.
8	I had a couple questions.
9	Again, it says it's the
10	backbone for the Core Ads system.
11	That is not exposed to third parties or
12	made accessible to third parties or is it?
13	A I don't know. I don't know much about the
14	ads system.
15	Q All right. And then so I won't ask
16	about it.
17	I assume same answer for
18	A Yeah.
19	Q Okay.
20	A No, I don't recall anything more on that.
21	Q All right. For Akkio locality.
22	A I do have a little bit more knowledge of
23	that one.
24	Q What can you tell me about this one?
25	A So Akkio is the purpose of this is to
	Page 27

1	if you have data that really only you are accessing,
2	right, through our products, this
3	Q When you say "you," do you mean a user or
4	do you mean a Facebook employee?
5	A A user.
6	Q I don't want to
7	A An outside yeah. An outside non-Meta
8	employee who is using our product; right?
9	So, you know, my mother using the Facebook
10	app, there's certain information or certain data
11	that might only be for, like, her configuration
12	settings; right? It's not like publicly available.
13	She is the only person that would look at that data.
14	And so what would happen is it determines,
15	it detects where in the world she's accessing
16	the prod you know, the product is accessing the
17	data from and it will relocate that data to a data
18	center closer to her. So if she's on the East Coast
19	and moves to the West Coast, after some time it
20	figures out, oh, we should move her data.
21	Q I got it.
22	And, again, it's moving her data, which is
23	what
24	When you say "the user's data," that's the
25	data available through the social graph or the data
	Page 28

1	is broader than that? Like is it all of their data?
2	A
6	So that's about that's the depth that I
7	have knowledge of is what it's the feature is
8	providing, but I don't really have the use cases or,
9	you know, other information.
10	Q Did they provide when they
11	submitted it to you? Did they give you
12	their submission?
13	A Yeah. I'm sure it was discussed. I don't
14	think we you know, this is
	But when we
16	actually meet to understand what they're doing, most
17	likely, they would have described, you know, a
18	scenario.
19	Q You have some description of what for
20	each of these systems, just so I get the process,
21	you guys would send
	talk to whomever, make a decision
24	and then schedule a follow-up meeting, if deemed
25	appropriate, to understand the
	Page 29

1	systems and that your team did not you, per se,
2	but when I say "you," I mean the royal you the
3	team that you were working with would go and
4	interview and get or whatever for that
5	particular system and that's how that was handled.
6	Is that accurate?
7	A So it would be that it's possible that
	would come up and I think in this particular
9	case I was involved with it. It's been some time.
10	So my memory isn't fresh about the details. But I
11	can imagine that we did just talk about
12	It's not a part of the process, though.
13	It's not like we go and say explicitly as part of
14	the engagement, "Okay, let's discuss ." It
15	would be an extension of discussing, "Okay,
	" And that
18	could lead to, but is not required to lead to a
19	discussion on
20	Q Okay. And so for ,
21	that's only available or made accessible to internal
22	Facebook or external as well?
23	A I don't know on that one.
24	Q You don't know on that one. Okay.
25	Okay.
	Da 20
	Page 30

1	A	I have a little knowledge
2	Q	
3	A	on this.
4		Yeah. This would be internal only.
5	It's	
6	Q	Got it. Okay. Great.
7	А	for providing storage.
8	Q	That's all I need. Internal only. We're
9	good.	
10	А	Okay.
11	Q	So it's not yeah.
12		is that how I should say it?
13	А	yeah.
14	Q	Is that a development tool or
15	А	It's yeah. I actually don't have more
16	knowledge	e than what's kinda written in that
17	descript	ion.
18	Q	Okay. But, again, is it only available to
19	Facebook	internally, the tool set?
20	А	I don't
21	Q	Because it can be read maybe as a tool set
22	availabl	e to app developers or is it a tool set only
23	internal	to Facebook?
24	A	I don't know. Actually, I'm not sure.
25	Q	But in your system of the data you
		Page 31
		1090 31

1	collected, it would have more information about the
2	system at some level than these three lines or five
3	lines here?
4	A It will have more information, but again,
5	oriented around the
	when initiated by a
7	user, not necessarily how the
8	you know, what the actual data is.
9	Q Right.
10	A And we just took kind of like that binary
11	yes/no user data. Not anything beyond that.
12	Q And , is that first
13	question, is that available or accessible to
14	external parties, third parties, that data?
15	A I don't I don't know actually on this
16	one.
17	Q All right. And then, I assume, is
18	like but I didn't want to can you
19	confirm that or no?
20	A Yeah. So I do have a little bit more
21	knowledge of
22	is a system that runs
25	Q I get it.
	Page 32

1	But it's not available to anybody off
2	platform?
3	A Correct. It's just yeah. It's just a
4	way it executes code that is running on our
5	platform.
6	Q I got it.
7	It's got user data that's used for your
8	web-based applications for Meta and you use it
9	internally. So you identified it as a user system
10	because it has user data for purposes of the other
11	issue you were addressing; but at a functional
12	level, that data stays on Facebook, isn't shared
13	with anybody. It's used internally at Facebook for
14	those jobs?
15	A Yeah. Just to clarify, I think what you're
16	saying is correct, but just to clarify.
17	It is like, , it is the
18	same as that. It's just that for like, let's say,
19	you make a request external to user of the
20	Facebook product, and if you make a selection of
21	some option that doesn't have to
	and the
	would be
24	able to take that and then make you know, kind of
25	
	Page 33

1		like where
2	Q F	Right.
3	E	But that's used by Facebook, that's used by
4	you guys i	internally ; right?
5	A Y	Yeah. Yeah. But I just want to
6	make sure	that's not
7	Q V	Ve can go on.
8	A 3	Teah.
9	Q E	But it's used to right?
10	A Y	Teah.
11	Q ]	It's used for it's for
12	C	Okay. And then, again, I don't mean
13	to sound i	ignorant. I didn't know what the app
14	even was.	
15	A Y	Yeah. I so I can't I don't know the
16	app.	
17	E	But what I can tell you from this is that
18	is	. So this would have
19	been a	
20	probably.	But that's where, you know, a
	į	, expand the acronym.
22	Q (	Got it.
23	P	And in the last
24	year, two	years?
25	A ]	don't know any kind of the so
		Page 34

1	basically what we would have with that is if it is a
2	viable application, then it would move to more
3	formal production. Like it would actually become
4	internally, you know, outside of that system or
5	the it would move out of the new product
6	experience to a more formal development team for
7	long-term development.
8	Does that make sense?
9	Q Yeah. Of course.
LO	So then
L1	are those internal tools? Because when
L2	I read it, it's not clear to me. Is that made
L3	accessible to third parties or is this internal tool
L4	sets that then you use to aggregate through the
L 5	Facebook platform?
L 6	A I believe this was an acquisition of a
L 7	gaming system or gaming
L 8	Q Okay.
L 9	A for virtual, virtual reality.
2 0	Q Oh, okay. So you're not sure, one way or
21	the other, if that made the data there is made
22	accessible off Facebook's platform?
23	A Right. I don't know.
24	Q Like if I have my high score, users can get
25	it or it's made available.

1	A	Okay. What I explained, I mean, that's the
2	depth of	understanding I have.
3	Q	Okay. So then
4	A	Those are internal.
5	Q	That's completely internal?
6	A	Yeah.
7	Q	And then
8	A	It's also an internal tool.
9	Q	And the results of that tool, it says "and
10	share the	em with others." That's to share internal
11	to Facebo	ook, right
12	A	To other
13	Q	or is that to share with others?
14	A	To other employees of Facebook. Basically
15	you can v	write these kind of data processing scripts
16	to genera	ate reports and so forth.
17	Q	Got it.
18		And It says "M & A." I'm
19	assuming	
20	A	That's an indication
21	Q	Well
22	A	The M & A tag would indicate that it was
23	through o	our mergers and acquisitions. So this was
24	an acqui	red company that we then, you know, do the
25	same prod	cess; right?
		Page 36
	l	

1	Q But it's not part it is part of the VR
2	AR system or not the Facebook web platform?
3	A Yeah. This would be the VR indicates to
4	me that this was a part of the virtual reality
5	services.
6	Q Yeah. Right.
7	So that it's not the Facebook website or
8	social experience or mobile app as we understand it?
9	A Right.
10	Q All right. We covered and
11	We covered and I asked you
12	about about
13	It says powers the
14	application. It says is a standalone app for
15	creating music video content collaboratively. The
16	data stored on our system is mostly user data.
17	Do you have any idea if that user data is
18	accessible to third parties off platform?
19	A I do not know.
20	Q I don't know if that's a
21	play on words or the state of t
22	A It's got two pronunciations, which one
23	you've got correct. and the other is
24	called It's an internal configuration
25	for applications and so forth. So it's internal.
	Page 37

1	Q Got it.
2	And then ,
3	that's hardware. So I assume that's not related to
4	the social piece, but is that correct, that
5	assumption?
6	A I don't know. Yeah. Yeah. I would be
7	speculating, but it does seem a reasonable
8	inference.
9	Q All right. And then, aka
10	is used to store contributors. I didn't know
11	how you define what's a contributor.
12	A Yeah.
13	Q Do you know, by chance?
14	A I don't know.
15	Q And then my question is
16	A And just for
17	Q My real
18	A Yeah. Sorry. Go ahead.
19	Q No. I was just going to ask, does this
20	data go off the system anyways or is this all
21	internal?
22	A Yeah. I don't know that.
23	Just to clarify the use of parens here. So
24	this is indicating that

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1	
4	Q Okay. So didn't know that's how it's
5	connected. I was wondering because that's in a
6	couple places, which makes a lot more sense then.
7	It's like, Why are you repeating systems? But now I
8	get it.
9	Okay. a digital asset management
10	tool or referred to as DAM.
11	Is that an internal tool or an external
12	tool here? Like can a user is this data, is it
13	accessible off Facebook's platform or shared off the
14	platform?
15	A Yeah. I don't know.
16	MR. GARRIE: Did we lose the court
17	reporter?
18	THE COURT REPORTER: No. I'm here.
19	BY MR. GARRIE:
20	Q So returning back.
21	again, I
22	A A digital asset management system.
23	Q Yeah. Okay. All right.
24	I assume this is an internal tool
25	accessible only in user data, but it's only user
	Page 39

1	data for the operations of Facebook.
2	Is that an accurate assumption?
3	A Yeah. My knowledge of the system is that
4	it is for internal reporting and, again, it's kinda
5	like in a way for internal tools.
9	Q That's what I thought.
10	And is the same sort of genre or is
11	it different in that it's memory in real time, but
12	same idea, internal?
13	A That's to the best of my knowledge,
14	that's correct.
15	Q This is a big terabyte. 10-terabyte tables
16	are, like, some big old tables.
17	That's what it means; right? Up to 10-plus
18	terabytes; right? That's for the tables, queries on
19	those tables; right?
20	A Yeah.
21	MR. GARRIE: Oh, and this transcript needs
22	to be marked confidential for the court reporter.
23	THE COURT REPORTER: Okay.
24	MR. GARRIE: And then we'll work it out
25	from there with the parties afterwards just for
	Page 40

1	purposes of keeping it all flowing.
2	Q Again, can
3	you confirm, is this internal data or is this made
4	accessible to third parties?
5	A Yeah. If I remember correctly, this is
6	actually a backing component of
7	Q All right.
8	A So, again, kind of like that internal
9	workflow management.
10	Q Yeah.
11	The reason why I'm asking is, right,
12	because it says it's designed to let people and I
13	just didn't know if those people were the third
14	parties or
15	A No.
16	Q they're Facebook employees.
17	A Those would be Facebook employees.
18	Q And then the I I'm not sure how to
19	pronounce that one.
20	A Yeah.
21	Q So I'm not even going to try.
22	A Yeah. That's just it's a UI tool for
23	running queries on back-end databases used
24	internally.
25	Q Internally.
	Page 41

1	All right. It's actually much more
2	productive than I thought it was going to be. So
3	we're doing well.
4	it says it's a back-end
5	platform to build audience segments.
6	My question is, is that accessible to third
7	parties or when you say "back-end," is it only back
8	end to Facebook?
9	A I'm not familiar with that system.
10	Q And we'll just say It says
12	I assume that's an internal tool, but can
13	you confirm that?
14	A Yes. That's
14	A Yes. That's
	A Yes. That's  Q And so Gluster FS, Dataswarm is built on
16	Q And so Gluster FS, Dataswarm is built on
16 17	Q And so Gluster FS, Dataswarm is built on Gluster FS.
16 17 18	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm
16 17 18	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm instance on Gluster FS. Yeah.
16 17 18 19	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm instance on Gluster FS. Yeah.  Q And is this an internal tool set that's
16 17 18 19 20	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm instance on Gluster FS. Yeah.  Q And is this an internal tool set that's used? Because I wasn't
16 17 18 19 20 21	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm instance on Gluster FS. Yeah.  Q And is this an internal tool set that's used? Because I wasn't  A That's correct.
16 17 18 19 20 21 22	Q And so Gluster FS, Dataswarm is built on Gluster FS.  A That's correct. It's, yeah, the Dataswarm instance on Gluster FS. Yeah.  Q And is this an internal tool set that's used? Because I wasn't  A That's correct.  Q exactly sure who has access to it.

And then I don't know to --1 Q is how they refer to it. 2 A Thank you. 0 a --4 Is 5 I do have some -- yeah. I can tell you a 6 little bit about this one. I do have some knowledge 7 about it. It's basically the deletion technology for 8 9 WhatsApp. So when the user deletes data on 10 WhatsApp, this is the system that then deletes that 11 from the underlying storage. 12 Yeah. But the user has no direct access to 0 13 this; right? It's not --No. They don't have direct access to 14 Α 15 this. The access would be through -- it's the same 16 as if Facebook -- you know, the -- the Facebook product, someone deletes, and then it goes through 17 18 deletion. 19 All right. 0 20 Α This is specific to WhatsApp. 21 Yeah. Okay. 0 22 A And you don't have -- you don't have access 23 to it. It runs on the back end. 24 0 And then 25 A Yeah. So that's our --Page 43

1	Q What's this www?
2	A So that's for
	And this is the
4	central that may have been
5	discussed in other conversations that will delete
6	data when someone requests it to be deleted through
7	our application.
8	Q Got it.
9	But, again, it's only available this is
LO	data the data in the platform
L1	A It's only internal.
L 2	Q is only
L3	A It's only internal.
L4	Q Got it.
L 5	And . I didn't know what
L 6	signals meant. So
L 7	A Yeah. I'm not I'm not familiar with how
L 8	this data is used.
L 9	Q Because I wasn't sure if that means that
20	they're taking
21	Do you know what kind of user data? Is
22	that individual user data going into this system or
23	anonymized user data? Did they tell you what kind
24	of user data they're collecting for these systems,
25	by chance?
	Page 44

1	A I don't know. No. I didn't work with
2	
3	Q And is this Facebook ?
4	Facebook, not the virtual. Not, you know, virtual.
5	It's specific to do you have any idea?
6	A No. I don't have any idea.
7	Q . I thought it
8	was only internal, but I just want it's only
9	internal access. The data never goes off platform
10	here, user data?
11	A Yeah. I can't really answer that. I'd be
12	speculating on that one. I'm not familiar with it.
13	Q is
14	A Yeah. I am familiar with and it is
15	internal only.
16	Q And the data in there okay.
17	And it says
19	Is it built on or is it called
20	in this case?
21	A Yeah. I think this is just its, you know,
22	acronym.
23	Q Got it.
24	This is available only internally? Because
25	what does SEV stand for?
	Page 45

1	A Site event and we refer we internally
2	call this SEV. So this would be when, you know,
3	something breaks in production. So there's a site
4	event, and then from this description this is what
5	the DevOps teams use to investigate.
6	Q But it's only available and accessible to
7	the DevOps team?
8	A Right. I I don't know if I see there
9	that explicitly stated. So I don't I can't
10	confirm, but it is an internal tool. Site events
11	are internal, you know.
12	Q We can leave it there.
13	A Yeah.
14	Q What's a least to the least t
15	A So just going by the description,
16	is a compute engine for
17	large-scale graph analytics.
18	Yeah. You know, I'd be speculating and
19	just kind of inferring from what's written there. I
20	don't have experience or knowledge of that system.
21	Q And, more importantly, is it available or
22	is it open to third parties or not?
23	A Yeah. I'm not sure.
24	Q And then Downpour Interactive, that's
25	through M & A?

1	A Yeah.
2	Q Is this a game on Facebook's platform or is
3	it separate from Facebook's platform?
4	A I don't know, actually, but I imagine it's
5	actually our reality lab. That's where most of
6	these M & As are. It's for games that are acquired
7	for
8	Q All right.
9	A this.
10	Q Okay. Got it. That's very helpful. I
11	kinda Googled it. I just couldn't figure out if it
12	was integrated into the larger platform.
13	Okay. So then
14	A Uh-huh.
15	Q like the elephant. Is that internal?
16	A It's internal storage. Like a backup
17	system.
18	Q And no third parties have access to that
19	and the data stays there; right?
2 0	A That's correct.
21	Q Okay. Then we have
22	A Yeah. Yeah. So I don't have knowledge of
23	this, but I can tell like I can tell you what
24	Novi is referring to. That's the cryptocurrency
25	solution we're developing. So this would be part of
	Page 47

1	that system.
2	Q Okay. But that's done in the crypto space
3	and not in the Facebook platform itself?
4	A That's correct.
5	Q So when it says because the reason I'm
6	even it says "risk and compliance assessments."
7	That's available only internal to Facebook.
8	Is that an accurate assumption?
9	A I can't confirm that.
10	Q I wasn't exactly sure how user data fit
11	into that. So I was hoping you could clear it up.
12	All right.
13	A Well, just to offer. You know, Novi being
14	a cryptocurrency wallet service. That would be
15	where customers or, you know, external people using
16	the Novi cryptocurrency services would be user data.
17	Q So then this is a system that sits on top
18	of the cryptocurrency wallet. So it's used for
19	compliance and risk assessments as an internal tool
20	for regulatory reporting maybe. Okay. But it's
21	solely related to the crypto platform?
22	A That's correct. That's the the Novi is
23	the indicator for that, yeah.
24	Q Okay. And ?
25	A Uh-huh. This is an internal only.
	Page 48

1	Basically it operates like shared on a shared
2	network drive.
3	Q Okay. And ??
4	A Yeah. So I can't really speak to the use
5	of that and accessibility.
6	Q Sorry. I thought I had one of my kid's
7	teachers might have had Omicron. So I was just
8	getting an update.
9	All right. Oh, sorry.
LO	is internal. I had a
L1	question about and I
L2	and some of these internal tools, they get data,
L 3	right, and they process it. The output from that
L <b>4</b>	tool doesn't ever leave. Is it output to a
L 5	different Facebook system?
L6	A I don't know.
L 7	Q You don't know. Okay.
L 8	What's DR compliant. Is that
L 9	disaster recovery compliant?
20	A That's correct. That's correct.
	So this is where the photos and
22	videos primarily are stored.
23	Q And that's an internal tool. So that's
24	user data, Facebook. This is where Facebook
25	internally stores user data?
	Page 49

1	A Right. That's where we internal and
2	accessible only by the applications that run within
3	Facebook infrastructure.
4	Q F3. Facebook Feature Framework.
5	A Yeah. This is referring to machine
6	learning features.
7	Beyond that, I don't have
8	Q How does user data relate to this?
9	A So I the machine learning will operate
LO	on, you know, the history of user data.
L1	Q But it's only machine learning internal.
L2	What I'm basically saying is Facebook, I'm
L 3	a user of Facebook. I give you my data and it's
L 4	only does the F, the feature framework, involve
L 5	the user data being available to third parties or
L6	people off platform?
L 7	A No. That would not be. Yeah.
L 8	This case I have some familiarity with and
L 9	it's used internally by the machine learning systems
2 0	that then you know, an example of machine
21	learning would be making recommendation on what
22	groups you want to join or something like that based
23	on
24	Q So then the output
25	A your behavior on the system. Yeah.
	Page 50

1	Q Well, where is it? Does that output then
2	feed into another system?
3	A It would, yes. This is the the feature
4	framework, this is providing a way of managing the
5	machine learning features. So the machine learning
6	system would use this. Internal only.
7	Q Internal only. Okay. I think I get that.
8	All right.
9	A This one actually is externally accessible.
10	I do have
11	Q Okay.
12	A It's a message for when you're sending
13	messages by messenger, and so it's temporary. You
14	know, it's a receiving queue that then would
15	interface with a back-end system like the ones we
16	what have you.
17	Q So my question is
18	A This
19	Q Go ahead. Keep going.
20	A I was just going to say that this is the
21	messaging interface exposed to the outside.
22	Q And then when you say "exposed to the
23	outside," can you be more clear?
24	So if I let's say I write an app that
25	uses messaging functionality. Is that even
	Page 51

1	possible? Is that where
2	A No.
3	Q Because this says queue, persistent queue.
4	A Yeah. Yeah. I do again, I actually
5	have a little bit more depth of knowledge on this
6	one. I did some work with this as a messenger user,
7	the application, the messenger application.
8	So it's directly coupled with use of
9	Facebook products, messenger.
15	A What's that?
15 16	A What's that?  Q So there's no data
16	Q So there's no data
16 17	Q So there's no data How old is the data in the system?
16 17 18	Q So there's no data How old is the data in the system?  24 hours? Instantaneous? Like how old would user
16 17 18	Q So there's no data  How old is the data in the system?  24 hours? Instantaneous? Like how old would user data actually be in the system?
16 17 18 19	Q So there's no data  How old is the data in the system?  24 hours? Instantaneous? Like how old would user  data actually be in the system?  A Yeah. I don't know, but it would you
16 17 18 19 20	Q So there's no data  How old is the data in the system?  24 hours? Instantaneous? Like how old would user data actually be in the system?  A Yeah. I don't know, but it would you know, specifically, but it would be, I think, in
16 17 18 19 20 21	Q So there's no data  How old is the data in the system?  24 hours? Instantaneous? Like how old would user data actually be in the system?  A Yeah. I don't know, but it would you know, specifically, but it would be, I think, in line with what you're describing. Very short term.
16 17 18 19 20 21 22	Q So there's no data  How old is the data in the system?  24 hours? Instantaneous? Like how old would user data actually be in the system?  A Yeah. I don't know, but it would you know, specifically, but it would be, I think, in line with what you're describing. Very short term.  Q So it's internal tool management,

1	outside, just so I understand, that means it's
2	exposed to Facebook messaging, like a consumer using
3	Facebook messaging. I mean, it's not exposed to,
4	like, a third-party app developer that builds
5	something. They can't a third-party app
6	developer doesn't have the ability to access this
7	information or does it?
8	A For the what I worked on with this
9	product or, you know, where I was involved with this
10	and through the deletion program that we're mainly
11	discussing now where the inventory came from, the
12	messenger application, yeah, is the one running on
13	your phone or your laptop would be the one that
14	interfaces with this. It's not like a general
15	Q Just that?
16	A queue for external developers to access.
17	It's only for that messenger application.
18	Q Okay. So it's an internal tool Facebook
19	messaging uses to facilitate messaging for an
20	individual user using some data structure
21	A Yeah.
22	Q to manage tools?
23	A I think that that's a fair description. I
24	just want to make sure I'm not misrepresenting it in
25	terms of, like, the internal tool part.

1	Q I said "tool." When I mean internal tool,
2	I mean internal to Facebook, meaning that only
3	Facebook messaging is the tool. Only Facebook
4	messaging application can access this database,
5	
6	If I build a Daniel Garrie data messaging
7	tool, I can't access this database; right?
8	A That's correct.
9	Q Okay. And if I build an app, I can't
10	access it as well. Only Facebook messaging can
11	access this dataset; right?
12	A That is to the best of my knowledge,
13	that is correct.
14	Q Okay. I assume, is just a
	and it has nothing to do with
16	users.
17	I didn't get how user data, again, fits
18	into this.
19	A Yeah. So this is a case where it is not
20	you know,
	what's the word?
25	I'm losing the term.
	Page 54

1	Q
2	A Yeah, but it's actually a different term
3	that I was looking for.
4	But basically, you know,
	,
6	as you're describing, used by only for internal
7	use.
8	Q So I guess my question is, no off-platform
9	developers have access to this repository?
10	A Correct. And user data is should not be
11	stored there.
12	Q Yeah. The bottom line is, it's only for
13	you guys?
14	A Yeah. That's correct.
15	Q Okay. FBLearner.
16	A Uh-huh. I don't have a lot of knowledge,
17	other than to say that this is a part of the machine
18	learning artificial intelligence systems.
19	Q And the reason I'm even asking, it says all
20	Facebook engineers. Is that limited just to that
21	subset or can other engineers off platform gain
22	access to the AI platform?
23	A I actually don't know the answer to that.
24	Q All right. And, again,
25	A Yeah.

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1	Q This isn't available to a third party
2	A That's correct.
3	Q or is it?
4	A It's not, no. This is it is not. I do
5	have familiarity with this system as well a little
6	bit.
7	So this is users sending notifications to
8	devices. So it provides those mappings of your
9	account to device IDs and like, you know, being able
LO	to get to your phone to push a notification to your
L1	phone. So it's only used internally for that
L2	purpose of delivering notifications generated by our
L3	applications.
L4	Q Okay. Got it.
L5	And then .
L6	A Yeah. That's just
L 7	Q That's just binary?
L 8	A Yeah. Exactly.
L 9	Q How does user data well, I don't need to
2 0	know.
21	The point is that this is only on platform.
22	Never goes anywhere. Is that accurate?
23	A That's correct.
24	Q And it's never made accessible to anybody,
25	but Facebook individuals?
	Page 56

1	A	That's correct.
2	Q	So FOQS.
3	A	Yeah. This is another part of the
4	system.	
5	Q	My only question is, it's only made
6	accessib	le so it has user data, but is it made
7	accessib	le to third parties, whether shared or off
8	platform	?
9	А	Yeah. No. This is internal.
10	Q	And then that's a new product;
11	right?	
12	А	Yeah. Yeah.
13	Q	And I actually went and looked at that and
14	I don't	fully get the user data piece there.
15	А	Yeah. I don't. I think actually you
16	probably	have more knowledge of it than I do, of
17	that par	ticular one.
18	Q	All right. Now, or or
19	A	Yeah.
20	Q	I didn't understand this one.
21		My first question is, is it accessible off
22	platform	, the data in the system
23	A	No.
24	Q	the user data in here?
25	A	No. Not but, to clarify, I want to make
		Page 57

1	sure I'm not misrepresenting this.
2	Yeah. There is no external access to that
3	system. So it would only be through applications
4	running on Facebook infrastructure that could access
5	that data.
6	Q Internal. But let's say a Facebook mobile
7	app, that has access to this data infrastructure.
8	But Daniel's Facebook mobile app, would I have
9	access to that infrastructure?
10	A No. No. And this would be this is
11	running behind the WhatsApp application.
12	Q Oh, okay. Then it makes a little more
13	sense.
14	All right. Again, I didn't understand this
15	or running on and this is
16	external research initiatives.
17	A Yeah. I don't know.
18	Q Is the user data made
19	You don't know?
20	A Yeah. I'm not familiar with that system.
21	Q And do you know what Jupyter
22	I don't even know how to say that.
23	Jupyter.
24	A Jupyter.
25	Q Jupyter, with a Y. JupyterHub deployment,
	Page 58

1	what is that?
2	A My knowledge of Jupyter is, this is a
3	public like, this is not a Facebook technology.
4	It's for writing code in Python, I believe is the
5	framework.
6	Q Yeah.
7	A Python notebooks.
8	Q Okay. Then is that internal HR
9	or is that like people that have life goals?
10	It says for teams to track goals
11	information. I didn't know if that was Facebook app
12	has goals or I didn't know.
13	Is this an internal tool?
14	A I don't know, actually. It sounds like it,
15	but I don't know.
16	Q Okay. I'm going to agree with you on that
17	one. Sounds like it.
18	The Hive. I've heard lots about the Hive,
19	but maybe you can explain to me the Hive a little
20	from your perspective.
21	A Yeah.
23	Q Who has access to the Hive?
24	A Internal only.
25	Q Do third parties?
	Page 59

1	A Yeah. This would not be directly
2	accessible to third parties.
3	Q Can a third-party app developer, though,
4	access data stored in the Hive?
5	A Not to my knowledge.
6	Q Because it says an engine that executes
7	queries written in FB-HiveQL and the Hive Query
8	Language. So I didn't know who was actually
9	because it looked to me but you're not sure or
10	you're sure?
11	A These I cannot definitively confirm, but
12	my knowledge of these,
	and it the large
14	number of use cases are related to
16	Q Okay. And you don't know with any
17	specificity what user data sits in any of these
18	systems, right, just like you stated
19	A That's right.
20	Q at the beginning?
21	A That's correct.
22	Q
23	accessible internally, the user data?
24	A I can't confirm that. I'm not familiar
25	with that system.
	Page 60

1	Q All right. What's it
2	mean when there's a slash? Does that mean anything?
3	A Nothing in terms of how we've been tracking
4	it. That was how it was given to us. So it must
5	mean something within a team.
6	Q Got it.
7	Is this, you know is any of the data in
8	this system discoverable off Facebook's platform or
9	available or accessible?
LO	A I do not know.
L1	Q
L2	A I am not familiar with this.
L3	Q Didn't think you were, but it likely
L4	wouldn't be accessible? Facebook doesn't share any
L 5	of the data in the or make it accessible;
L6	right?
L 7	A I don't know. I actually am not familiar
L 8	with this system.
L 9	Q You don't know?
20	A Yeah.
21	Q Is that the chat tool?
22	A That's correct. It's an internal instance
23	of that. So it's used internal only.
24	Q World AR. Is this augmented
25	reality? I just wasn't sure.
	Page 61

1	A That would be my understanding. I'm not
2	familiar with the system, though, or World AR
3	directly.
4	Q All right. And then Laser.
5	A Uh-huh. I don't know on Laser to the
6	questions that you've been asking.
7	Q Is it accessible or available to third
8	parties or shared?
9	A I do not know.
LO	Q All right. I thought it was internal
L1	operations, but I wasn't sure. So any
L2	A I don't know.
L3	Q Oh, okay.
L 4	
L 5	A Yeah. I don't know how to pronounce that
L6	either.
L 7	Q All right. Again, I thought it was, again,
L 8	an internal tool since it says "always be allocated
L 9	in different racks."
20	Is that a physical rack, like server rack?
21	A Yeah. That would be my understanding.
22	Q Okay. So it's likely most likely, it's
23	an internal tool.
24	and particularly the part I'm
25	interested in is stores action metadata on actor
	Page 62

1	ID.
2	I didn't understand exactly how user data
3	is used here or if it's made accessible or shared
4	with third parties with this.
5	A I don't know. I'm not familiar with the
6	
7	Q Okay. seems like it's an internal
8	tool or no?
9	A Yeah. I don't I don't know about
10	either, other than what's written there.
11	Q When it says in-memory cache for actions
12	and objects, though, that is it says it doesn't
13	actually store any physical objects such as photos
14	or posts.
15	So I wasn't sure exactly what user data
16	is user data just temporarily stored in that system?
17	A Yeah. I'm not sure.
18	Q Okay.
19	A Yeah. I'm not sure.
20	So I have familiarity with the function of
21	this system and, you know, as well as what's
22	described there, but I don't know beyond that.
23	Q But it's not likely; right? I assume it
24	wouldn't be likely that Facebook would be making the
25	system sharing any of the data in there or making
	Page 63

it accessible to third parties, but
A I think that's a fair you know, a fair
assumption, but I don't know. I can't confirm.
Q All right. Live streaming data or, sorry,
A I'm not familiar with that system either.
Q All right. Okay.
that accessible to third parties or shared or would
you know?
A I don't know beyond what's written in that
description.
Q Okay. And , is that
user video? Can you just explain to me how user
data fits into that one and?
A Yeah. So live video would be our kind
of our a product feature to be able to stream
videos through our products. And as described here,
the, I can't you know,
aside from what's written here, I can't confirm
whether or not there's any external third-party
access to this.
Q Or if it's shared or made accessible. All
right.
A I'm not sure.
Q What about for ? It
Page 64

1	says "internally at Facebook." I assume that means
2	it's not available or made accessible to third
3	parties, but can you confirm that?
4	A I'm not familiar with this system. So I
5	can't confidently confirm.
6	Q This system how is user data
7	again captured in here?
8	A So, you know, by that description of
9	unstructured logging data generated by all
L O	applications across Facebook, what I understand
L1	there is that it is within the application's
L2	determination of what gets logged, which could be
L 3	user data.
L <b>4</b>	Q When you say "application," is that
L 5	third-party applications or Facebook applications?
L 6	A Let's see what it says there. Yeah. I'm
L 7	not I'm not familiar enough with it to
L 8	definitively say.
L 9	Q And then would this service be available or
2 0	made available or accessible off you know, or
21	made discoverable off Facebook's platform, like
22	meaning to third parties?
23	A I would find that highly unlikely, but I
24	can't definitively say.
25	Q Okay. I interpret that to be an
	Page 65

1	internal-only tool for managing operations. Is that
2	accurate?
3	A That's accurate. I am familiar with
4	
5	Q And , same?
6	I wasn't sure how user data got involved in this.
7	So that's why I'm asking.
8	A Yeah. I don't I don't have I don't
9	have familiarity with that.
LO	Q Okay. All right. I don't have a clock. I
L1	don't know how long we've been going. I apologize.
L2	A It's 1:26 West Coast time.
L3	Q We could finish this page, and if you want
L4	to take a break for a few minutes and use the
L 5	facilities, the parties can go to their respective
L 6	rooms when we finish this, and I think we'll
L 7	probably, pending no surprises, finish in hopefully
L 8	an hour or less.
L 9	Does that work, Mr. Pope?
20	A That's fine.
21	Q If you have time today, I'd love to get it
22	all done today, if possible.
23	A Sure. Yeah. I'm happy to work with you on
24	that.
25	Q All right. And then
	Page 66

1	A So this is not
2	Well, maybe if you can ask the question
3	again.
4	Q So the reason why I'm asking is
5	it says it's
8	A Yes.
9	Q It is analogous to Amazon S3.
10	A That's correct.
11	Q I didn't understand, A, how user data was
12	stored in it; and if it's accessible you know, if
13	you know if Facebook either makes it accessible or
14	shares that user data in that system.
15	A Yeah. You can you can think of this the
16	same as III runs on top of and and
17	where it provides additional, like, S3-type
18	features to the data stored that
21	Q Has I got it.
22	And just to be clear, is
23	Facebook doesn't, you know, share or make the data
24	in accessible to third parties or off
25	platform or does it?
	Page 67

1	A It does not. It's similar, it's the same
2	answer there as
3	Q Got it.
4	And then Memcache.
5	A Yeah. That would be used internal only to
6	accelerate performance of applications and products.
7	Q Facebook applications, not third-party
8	applications; correct?
9	A That's right.
LO	MR. GARRIE: Okay. We'll take we'll go
L1	off the record.
L2	(Recess taken.)
L3	(Off the record at 1:29 p.m. Back on the
L4	record at 1:46 p.m.)
L5	MR. GARRIE: Okay.
L 6	Q managing metadata for the Data
L 7	Warehouse.
L 8	Any idea here, Mr. Pope?
L 9	A No. I'm not familiar with that system.
20	Q Okay. And
21	A yeah. Yeah. I'm not I just
22	know that this is basically what's written there,
23	version control server.
24	Q How would user data be involved? Just to
25	understand it for myself, like, any idea how user
	Page 68

1	data is involved in that?
2	A Yeah. That would be the this is
3	actually comparable to the <b>manner</b> one we covered
4	earlier as being a version control system. So it
5	wouldn't be a common case; but it's possible to, you
6	know, submit maybe like a test, the unit test that
7	would have some user data. That would be the case.
8	Q I get it.
9	When you say "submit," it would be from
10	Facebook developers, not third-party developers?
11	A That's right.
12	Q Any ideas, Mr. Pope?
13	A No. I'm not familiar with this system
14	either.
15	Q I'm fairly familiar with MySQL, but
16	A Uh-huh.
17	Q is it accessible to third parties? I
18	mean, it can be.
19	A So this is the general category that
20	covers, I believe, multiple instances of the
21	database and I'm not familiar with the specifics.
22	Q Got it.
23	. I just assume
24	well, any is this internal new product? Like it
25	says "small entrepreneurial teams." Is that
	Page 69

1	Facebook teams?
2	A Right. Yeah. This is the referenced
3	earlier. This is kind of the team-level view of
4	that where they have some
6	Q But it's Facebook internal teams that are
7	accessing data, not third-party developers that are
8	building and accessing the
9	data there?
10	A Yeah. I don't actually know that level. I
11	can't really confirm that.
12	Q Okay. And Novi
14	A Yeah. Aside from what's written there is
15	what I know.
16	Q Okay. So we don't know if that data in
17	there is being because it says a queueing system
18	storing user data.
19	So you don't know if Facebook is making
20	that accessible or sharing that with others outside
21	of Facebook?
22	A That's correct. I don't know how it's
23	used.
24	MR. GARRIE: Okay. So, Facebook, can you
25	send the letter to the court reporter so she has it
	Page 70

1	to enter as an Exhibit A to the proceeding, just the
2	letter with the exhibit rather than the entire
3	declaration?
4	MS. CLARK: You're just saying the
5	Exhibit A to the declaration, or are you asking for
6	the separate file name that had the details of the
7	system?
8	MR. GARRIE: The spreadsheet. Ideally, the
9	spreadsheet so she can have the spellings of the
10	different terms. The document we're looking at
11	right now.
12	MS. CLARK: Okay. Absolutely.
13	MR. GARRIE: All right.
14	MS. CLARK: Is her email address in the
15	chat?
16	THE COURT REPORTER: Yes. And also,
17	counsel on the line, if you can go ahead and put
18	your email addresses in the chat so I can follow up
19	later to find out your appearance information.
20	MS. CLARK: And we're sending this to you
21	right now.
22	MR. GARRIE: So we'll go back on the
23	record.
24	Q The Oculus , I assume
25	that's the Oculus system and that's not the Facebook
	Page 71

1	platform or are they combined?
2	A I don't know the answer to that in terms of
3	the last part of being combined. But this is
4	referring to Oculus, the reality labs product.
5	Q Okay. And This is kind of a very
6	generic description, storing off-line messages.
7	Is that for users, employees? Who can
8	access it? Do you have any idea, Mr. Pope?
9	A No. I'm not familiar with that system.
10	Q Okay. Any idea, Mr. Pope?
11	A I'm familiar with the service, but I don't
12	actually know really more than what's written there.
13	Q Is the service available to third parties?
14	A I don't know.
15	Q And the reason I ask, it says it provides
16	the user writing the data with the flexibility to
17	store the bytes on the storage systems of their
18	choice, while solving the reader's "where do I get
19	that data" problem.
20	A Uh-huh.
21	Q So I didn't know if this was a service you
22	were making available to third-party app developers
23	or if this was a service that was only available and
24	accessible to where the user's data is only
25	accessible and shared for Facebook, if that makes
	Page 72

1	sense.
2	A Yeah. No. That makes sense.
3	Yeah. Yeah. I just don't have enough
4	knowledge of that system to say.
5	Q Okay. Any idea here?
6	A No. I just have a very really, the
7	level of knowledge that's written there is the limit
8	of what I know about it.
9	Q And the way I read it is that it's only
LO	data storage and sync services to support Facebook's
L1	products.
L2	My question is, is the data store also
L3	available or made accessible to third parties? I
L4	couldn't tell from the description.
L 5	A Yeah. Yeah. I'm not familiar enough with
L6	it to know, to be honest.
L 7	Q And the reason I ask is it says "messenger
L 8	contacts." So that could obviously go one way or
L 9	the other.
20	A Uh-huh. Uh-huh. Yeah. I just haven't
21	worked with it to know.
22	Q That's all right. "I don't know" is
23	perfectly acceptable. I will follow up with
24	Facebook, as appropriate.
25	, which sits on

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1	What's Lift?
2	A Yeah. I'm trying to remember if I know
3	anything about this one. Yeah. I don't recall.
4	I I recognize the name, but this was it's been
5	some time since I worked with it. So I don't recall
6	the details of it
7	Q This is certainly
8	A nor do I remember.
9	Q But this does have user data that is in
10	the user data relates to, is it, ad impressions and
11	clicks?
12	A Yeah.
13	Q Conversions?
14	A I'm not sure. I think. Again, yeah, I do
15	think that that's a reasonable interpretation, but I
16	can't confirm.
17	Q Got it.
18	But it's not clear if it's an internal tool
19	that then or if it's available to advertisers or
20	third-party app developers?
21	A Right. Right.
22	Q So you're not sure.
23	What's historical transaction
24	data?
25	A So I do know that this is related to the
	Page 74

payment system. But beyond that I don't know, you
know, more than what's written there. But I can
share that the context would be related to the
payment system.
Q And at the time the system was being used,
was the data in it
I guess you may not know the answer, but
I'll ask it anyways.
Was the transactional data available or
made accessible to third parties or app developers
or people off the platform, the user transactional
data?
A Yeah. I'm not sure on that one. I don't
know.
Q And then That's built on the
MySQL. So the above MySQL, this is what a system
that's running on that. Is that how I should read
that?
A Yeah. That's actually correct.
Q Now, do you know if this is made accessible
or shared, the data in this system, with third
parties, the user data?
A Yeah. I don't know.
Q Do you know if this went into effect after
2014?
Page 75

1	A I don't know that one either.
2	Q Is that how I say that?
3	A yeah.
4	Q I don't even know what a
5	user is. So maybe you can tell me. What's
6	a user?
7	A The that I think they're referring
8	to here is another kind of version control system,
9	and I don't but I don't know beyond that.
10	Q But a user is not a consumer user.
11	It's a Facebook developer or the point is that
12	the users are a subset of a Facebook
13	employee?
14	A Right. Right. And kind of as stated
15	there, you know, users throughout the
16	company. So it's supporting those internal
17	employees is my best understanding of it.
18	Q All right. And Market How is user data
19	involved in the cache for the news feed data?
20	A I have I have some recollection of
21	working with this one, but, yeah, aside from just,
22	you know, inferring that this is the cache for news
23	feed, news feed would contain, you know, user data
24	posts and so forth, but I don't know beyond that.
25	Q But is it temporary cache or is it
	Page 76

1	A I don't know. Yeah. That would be my
2	assumption, but I can't say definitively.
3	Q And then looks like it's an
4	internal tool for infrastructure support team. Is
5	that accurate?
6	A I'm not familiar with this, this system.
7	Q Well, "Why did Facebook DAP go down between
8	today and seven days ago?"
9	A Yeah.
LO	Q Is there any reason, as far as you can
L1	think of, that a third party or somebody
L2	Is there any reason Facebook would make
L3	this accessible, the user data in this system
L4	accessible to a third party?
L 5	A I don't know of any, but I'm not really
L6	qualified to confirm.
L 7	Q But when it says "metric movements," what's
L 8	that mean? Do you have any idea?
L 9	A Yeah. So for that specific example, you
20	know, why did DAP. So that would be daily active
21	people. You know, we moved away from using the term
22	"daily active users," for whatever reason. So why
23	did the Facebook daily active people go down between
24	today and seven days ago? So analyzing the usage
25	patterns of our products is what that's referring
	Page 77

1	to.
2	Q Got it. So all right.
3	So maybe Facebook would make it available
4	to but is it anonymized? Do you know if the
5	data is this when we have user data, is this
6	de-anonymized user data or is this anonymized user
7	data? Just generally when people say, "We have user
8	data," is it specific individual users, like
9	Joe Smith?
10	A Yes. We don't actually have that, yeah,
11	level of. Like that wasn't a part of kind of when
12	we asked what type of data is stored there. I think
13	you'll have a great deal of variance across the use
14	cases.
15	So given an application's purpose, it could
16	very well be storing anonymized data,
19	Q Well,
	no?
21	A Uh-huh. Yes. We provided examples and
22	references for them to confirm.
23	Q Can you provide a copy of
	?
	Page 78

1	Because I'm assuming that the user data
2	isn't anonymized data. This is actual user data and
3	not anonymized data because you wouldn't have to
4	delete anonymized data from a system, no?
5	A Correct. This would be, you know, data we
6	collect about users using our products like through,
7	you know, them uploading or other things that we
8	understand by their use of our products.
9	Q Yeah. Through the use of apps or whatever
LO	it is. But the point is is that it's user data,
L1	meaning that it's identifiable to a user
L2	A Right.
L3	Q or people or however you
L4	A Yeah.
L 5	Q I just want to make sure. This entire
L 6	A Go ahead. Sorry.
L 7	Q No. No. I just wanted to make sure
L 8	because when I say "user data," right, I mean
L 9	identifiable information to an individual or a
20	person.
21	A Uh-huh.
22	Q So I'm assuming for all of these systems,
23	they have identifiable user, meaning identifiable to
24	an individual like person in the system.
25	A Our definition of user data is a little
	Page 79

1	more broad, I think, in that it might you know,
2	it may be things that we collect by the use of our
3	products and I can't say necessarily if it meets
4	your that more specific criteria of being
5	identifiable to a specific person.
6	Q Well, identifiable to a Facebook ID or you
7	have a universal ID; right? Identifiable at some
8	level back to an individual.
9	Well,
10	I'll be able to see to make sure we're looking at
11	apples to apples because it could be, Counsel
12	Kutscher Clark, just to make sure that this is
13	actual user data so we're not wasting everybody's
14	time looking at it.
15	MS. CLARK: So I'm not sure if Mr. Pope
16	understood the question, but this is what I
17	understood you to be asking, Mr. Garrie.
18	You're trying to figure out if all of the
19	data in these sources have called user data would be
20	data linkable to a specific person or whether it
21	might also be data that's aggregated with data about
22	other people or data that's been anonymized so it
23	can't be linked back. Is that what you're trying to
24	get at?
25	MR. GARRIE: Yeah. Because when you
	Page 80

1	submitted the declaration, right, it said that for
2	user data, and I just I've been assuming just
3	I just thought I'd dot my i's and cross my t's.
4	When I say "user data," I'm talking about
5	whether there's some entity that has a first name
6	and last name or a Facebook account. We'll just
7	leave it at that. Has a Facebook account credential
8	that is hopefully a human breathing entity, but
9	whatever.
LO	The bottom line is is that when you say
L1	"user data," that that type of data, in some
L2	fashion, exists. So, for example, cache or news
L3	feed data is the cache for a particular user's news
L4	feed. Now, it may only be available internally,
L 5	never shared and accessible. I just want to make
L6	sure, because if it's anonymized or genomized or
L 7	tokenized or anything like that.
L 8	So maybe when you send the survey, if you
L 9	could just send the to counsel the survey and
20	read it over, but it would be very informative for
21	me to make sure we're actually looking at user data.
22	THE WITNESS: Yeah. So just to clarify on
23	that request.
24	So we do have a standard definition. The
25	actual forms that were sent would be

1	So how actually did this versus,
2	you know, or what have you may be
3	different; right? So there's multiple. It's not
4	like a uniform form, you know, one single form that
5	
7	I can, you know, share some examples of
8	user data that might help.
9	One is, you know, data provided by our
10	users, like user-generated content, posts, so forth;
11	data we observe about a user, such as location data,
12	network data; the data we infer about our users',
13	like, interests. These are all things that we would
14	consider user data.
15	BY MR. GARRIE:
16	Q But that's all associated with the user?
17	A Right.
18	Q So that can infer data about people
19	anonymi like the key part of it is that it goes
20	back to an individual user, an individual discrete
21	entity?
22	A Right. Right. So where I'm kind of
23	pausing on this and I'll maybe have to take this
24	question back to give you a more vetted answer;
25	right?

Q	Okay
---	------

A Yeah. Is that these will tie to something specific. I'm not sure that it would be specifically a user or maybe it's tied to their photo. But I don't want -- yeah. I don't want to speculate here kind of the distinction like maybe what's covered when I answer this question. It might be a little bit more broad than the way that you're thinking of specifically.

Q I mean, that's what's occurring to me as we're going through, that may be how you define user data. So let me think about it.

We'll revisit it at the end, but yeah.

Because the reason why I asked is where it says

"root cause analysis for metric movement," that's

what really got me thinking how user data, is that

individual users, you know, active pool and you have

all their IDs in there? I mean, how you identify

them is different, right, whether you use a hash, a

UID or a string of numbers, letters, gibberish.

Whatever, however it is, right, the key point being

is that it's a user; right? And that's why -
that's really why I asked the follow-on question,

but we can revisit it at the end because we're

close, and the finish line is there. So we'll

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1	revisit it in a second.
2	A Yeah. Yeah. But just in terms of what we
3	provide to you, I'm not sure what that process is in
4	terms of making a request and going through whatever
5	the legal channels are. So I don't want to misstep
6	or go out of protocol.
7	Q No. So let me help you out.
8	Facebook has an internal process working
9	with Ms. Kutscher Clark, who is very familiar,
LO	fantastic outside counsel. She will help you and
L1	your client. I believe you actually have in-house
L2	counsel still on. There's a lot of people. But
L3	Counsel Chen is also very competent counsel. They
L4	will advise you exactly on the process.
L 5	You're just I'm asking you questions.
L6	If you don't know the answer, say you don't know.
L 7	If you need to get back to me with information, say,
L 8	"I want to confer with counsel," and we'll get back
L 9	to you with clarity of an answer. There's nothing
20	wrong with that.
21	A Yeah. Sounds good.
22	Q The reason why I'm asking is I just want to
23	make sure we're talking apples to apples for the
24	follow-on.
25	sits on top of
	Page 84

1	and it's designed to store user side features.
2	Do you have any idea if that's
3	A No.
4	Q accessible or made available?
5	A Yeah. I'm not I'm not familiar enough
6	with that system.
7	Q Because an API could have access to a
8	storage service or third-party app developer or
9	or not. So okay.
10	A Yeah. I'm not
11	Q green dot. I
12	didn't know what that meant.
13	A Yeah. I'm not I'm not sure what is
14	meant by "green dot" either. I think it's
15	Q Do you know what a power user is? Is that
16	an internal user?
17	A I don't know. I'm not sure what they mean
18	by that.
19	Q I assume this is only available
20	internally or is it made available or accessible or
21	shared with third parties?
22	A Yeah. I'm not I'm not I'm not sure
23	on that one either.
24	Q Okay. Do you know why they capitalize
25	Stream Processing?
	Page 85

1	A I don't know, actually. Yeah. I'm not
2	sure.
3	Q Okay. But fully managed general purpose
4	Stream Processing, I couldn't figure out what that
5	meant. For me to figure it out
6	A So
7	Q I mean, any thoughts, ideas?
8	A No. I can't yeah. I'd just be
9	speculating. I don't have contextual knowledge on
10	why they phrase it that way.
11	Q Okay. PYMK . What's a leaf
12	machine?
13	A Yeah. I'm not familiar with this
14	technology either or the leaf machines.
15	Q But you are sure that it has user data in
16	it somehow?
17	A That it could have user data.
18	Q That it could have use data?
19	A Yeah. So that's, again, kind of going back
20	to where you pointed out something that should have
21	been in that declaration is that the questions asked
22	was, is it possible to store, you know, or something
23	along these lines, is it possible that an
24	application of products using your data system could
25	store user data?

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1	Q Okay. Fair enough.
2	So I get what this is doing.
3	My question is, is this available to third
4	parties or accessible or made available?
5	A Yeah. I'm not sure about this system. I
6	don't know the answer to your question for
7	
8	Q And, again, but you have a point of contact
9	in your effort through the year that this is you
L O	know, or even before we even get to that, you have
L1	some response from them that would explain at some
L2	level more detail what seemed is?
L 3	A Yeah. And just to kinda clarify that path
L4	and why this, you know, has been a pretty cumbersome
L 5	effort is we do have the initial point of contact
L 6	that support the data systems themselves; but the
L 7	products and applications and infrastructure systems
L 8	that use those data systems, each one of them have
L 9	their knowledge of what data. You know, the actual
20	point of contact for might not know what
21	data is actually stored there. You would have to
22	then go to the next order of contacting the
23	application the product's using.
24	Q Yeah. But they would be able to provide
25	but they can provide a general idea. Your point of
	Page 87

1	contact is responsible for the system at some level,
2	no?
3	A They're responsible for the storage
4	capabilities and the deletion configuration. So
5	they would have
6	Q Are they technical?
7	A What do you mean by that?
8	Q Well, you say they're responsible for it.
9	So they would know what data is being written to
LO	I mean, I assume you had to ask the
L1	person that actually runs the data system at some
L 2	level. Whether or not they know what's put in there
L3	is different, but they would need to know what it
L4	does and how it works, no? To answer your question.
L 5	A Yeah. Yeah. No. I think so.
L 6	What they will know, and this is where, you
L 7	know, the solution of how they do this will vary
L 8	across the different data systems based on the
L 9	technologies.
20	So I don't know or to
21	be able to say how they do it, if they have that
22	knowledge. But for a data system that provides
23	storage services like key value store, the
24	customer's external, but the actual applications and
25	product that store data in will be an
	Page 88

1 admission control process that asks is it user data and they'll check -- and if they check yes, they 2 3 have to select the configuration options to delete the data according to our policies. 4 5 That's the extent that they know. So they 6 should be able to --7 0 Yeah. But there's more than -- yeah. they'll know if there's user data in there and what 8 9 it looks like. Whether it's accessible or not is downstream from that; right? 10 11 Α Му --12 That's downstream. 0 Yeah. 13 First I need to figure out if the user data is stored in it and then if it's available only 14 to -- the first step in the analysis is, is this 15 16 data, the user data, accessible or shared with third 17 parties or off Facebook's internal platform or is it aggregated and shared with another Facebook 18 application that then is shared with third parties; 19 20 right? 21 So, but the first step is just figuring out 22 like -- like the call logs, if I'm building a 23 third-party app and I'm making function call logs --I'm making function calls and you're restoring 24 25 because the aggregation of call logs is ambiguous.

1	Like is it aggregating all of a particular call in a
2	particular function going back to 2007 or is it, you
3	know, understanding and then
4	But the first simple question is, does
5	it is it available to third parties or accessible
6	to the outside, and then going from there?
7	A Right. Okay.
8	Q When you say "the feed," is
9	that the user feed, the friend feed? What's a feed?
10	A What's a feed? All the stories user has
11	seen.
12	So it seems to be referring to stories
13	through the news feed.
14	Q And do you know if this is is this
15	available to third parties or off-platform or shared
16	or accessible?
17	A I don't know. Yeah. I'm not sure about
18	that.
19	Q Ready At Dawn I looked up. It's a game
2 0	studio.
21	A Uh-huh.
22	Q What user data is this is this Facebook?
23	I mean, can you clarify when you say a
24	A Yeah. I do have some familiarity with
25	Ready at Dawn.

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1	So it was an acquired company, a gaming
2	studio for our reality labs division, and this would
3	be data the data that we talked about there was
4	the users of that game. Like so you log in and, you
5	know, you have some kind of profile.
6	Q Do they log in via Facebook or are they
7	logging in via you know, how are they when we say
8	user?
9	A Yeah. I don't I don't actually know
10	that detail.
11	Q More importantly, is that data, the user
12	data, available to any third parties?
13	A Yeah. And I'm not I'm not familiar
14	enough with that detail of the game and that system.
15	Yeah.
16	Q It's a video game that it's the user
17	data about the people that are playing the game,
18	though?
19	A Right.
20	Q
21	A Yeah. I just know, you know, kind of
22	what's written there is my knowledge of the system.
23	Q Would it be likely that Facebook would give
24	third parties access to their payment reconciliation
25	for users?

1	A Yeah. That's outside of my kind of
2	experience or expertise to actually have an opinion
3	on that.
4	Q But when you emailed it, when you sent them
5	the
8	A Right.
9	Q
10	A I do have some knowledge of this system.
11	Yeah. I do have some knowledge of this. So this is
12	more like internal storage for other systems.
13	Q Yeah. I assume you're not going to let
14	Google access
15	A Right.
16	Q this.
17	A So this operates at a lower level in the
18	tech stack, you know, providing more storage
19	capabilities, like physical storage.
20	Q Yeah. All right. All right. So then
21	?
22	A Uh-huh.
23	Q Who are UX researchers? Are they Facebook
24	researchers or are they third-party people?
25	A Yeah. I'm not sure who those people are.
	Page 92

1	Q And they're storing user data in the
2	system?
3	A Yeah. So I do have some experience with
4	just the in terms of that. This would
5	be for user experience research where they're maybe
6	doing a case or, you know, came in and you
7	kinda come in and use the product and what have you.
8	That might be one example of the type of research
9	that's being done.
10	Q All right. But is it being done by and
11	made available to third-party developers or anybody
12	else?
13	A That I don't know.
14	Q Okay. It says anyone. Does that
15	mean anybody can access this service?
16	A So this is similar to . It
17	is a lower-level storage interface. So it would be
18	used by other systems.
19	Example, uses underneath. So
20	it's a lower layer in the stack.
21	Q And when it says "anyone," who's anyone?
22	A Employees of Meta.
23	Q Okay.
24	A So they would use it. And just to kinda
25	clarify that, how they use it, these are libraries
	Page 93

1	that they would actually write their applications
2	and compile this code to store the data onto some,
3	you know, storage system.
4	Q So, but third parties wouldn't have access
5	to that?
6	A No.
7	Q .
8	A Yeah. I mean, the familiarity is just
9	what's written there that I have with it.
10	Q Any
11	A I don't have any additional knowledge or
12	experience.
13	Q
14	A I do have experience with and it's an
15	internal tool for doing visual data analysis. Yeah.
16	Q When you say
17	A Yeah.
18	Q Internal tool being? Sorry. Could you
19	repeat that?
20	A Yeah. It would be used by Meta employees.
21	It's not a production service or tool. It's for,
22	you know, analyzing. They call it kinda deep diving
23	on data, like some data that you import to the
24	system to, you know, kinda like like maybe things
25	like Excel with a bunch of extra features; right?
	Page 94

1	Like you put in a bunch of data and you can like cut
2	and, you know, kinda do different joins and do
3	different manipulations to understand the data and
4	do analysis.
5	Q Yeah. Excel on steroids.
6	All right. That to me is
7	pretty obvious.
8	But third parties don't have access, I
9	assume, to your backups?
10	A Right. Yeah. They do not.
11	Q
12	A Yeah. I'm not familiar with that, that
13	system.
14	Q And if I built like an app,
15	would I get access to this?
16	A I actually don't have enough familiarity to
17	say on this one.
18	Q Okay. I assume you don't provide
19	access to that or do you? It says within the
2 0	company and with external vendors.
21	A Yeah. So it is the method that's used for
22	exchanging files with other external vendors
23	Q With
24	A of the
25	Q With user data?
	Page 95

1	A There could be user data, you know, they
2	indicated by saying this on the form. I don't know
3	the nature of what those use cases are, though,
4	where they would be doing that.
5	Q Got it.
6	Is a service or something they back up
7	or well, we can figure it out later.
8	
9	A Yeah. So this is providing kind of a test
LO	MySQL instance.
L1	Q It says it captures all incoming traffic
L2	and replays it on another test in real time.
L3	Who is this available to or accessible to;
L 4	right? Because this is user if I'm assuming it's
L 5	user data, how is user data is this user incoming
L6	traffic of how they're using the Facebook platform?
L 7	A I'm not actually sure. Yeah. No. I don't
L 8	know.
L 9	Q Okay. I assume is not, but can
20	you confirm that it's not accessible to third
21	parties?
22	A Yeah. My experience with state is that
23	it's data processing jobs that were a message DB.
24	So this is part of a messaging service and does kind
25	of batch data processing, which would be an internal
	Page 96

1	process.
2	Q All right. Novi, that's your crypto;
3	right?
4	A Correct.
5	Q Do you know if that's accessible to third
6	parties?
7	A I do not know.
8	Q Okay. I didn't know
9	what candidate generation meant.
10	A Yeah. I'm not I'm not familiar with
11	that system or to be able to, yeah, really clarify
12	that term.
13	Q this is an application developer
14	review tool. Is that to who?
15	A Yeah. I'm not familiar with this one
16	either.
17	Q Okay. All right. So you're not familiar
18	if Facebook allows other third parties or shares? I
19	mean, I would assume it doesn't, but okay.
20	A Yeah. I'm not sure.
21	Q All right.
22	A Yeah. I am familiar with I mean,
23	to kind of the extent that they're a stream
24	processing library. So it would be used by internal
25	software developers, internal being Meta employees,
	Page 97

1	to create the stream processing jobs.
2	Q Got it.
3	I understood that to be an internal
4	Facebook dev tool or ops tool, but can you confirm
5	that?
6	A By the description with, you
7	know, these are for our company use by Meta
8	employees and as well that this is for archival
9	workloads, such as backups and data warehousing.
10	I don't have direct experience with
11	but I think by this description is it's an internal
12	system.
13	Q And then I would yeah. I would agree.
14	I assume is similar, but again
15	A Yeah. I'm not familiar with this system to
16	be able to answer.
17	Q What's composability mean?
18	A I'm not sure. I'm not familiar with that
19	term in this context.
20	Q I've worked with, but do you give
21	third parties access to your
22	A I don't know, actually. I'm not sure.
23	Q But user data is moved into and
24	then you run on it?
25	A There can, yeah. So there can be user data
	Page 98

1	in performing the .
2	Q Yeah. Okay. Always a selling point.
3	A Yeah.
4	Q Any idea?
5	A No. No. I'm not sure. I don't know on
6	that one.
7	Q Is there any reason you would think that
8	Facebook would make this accessible to a third
9	party or the user data stored in this system or
10	shared?
11	A Yeah. I think I'm just actually not
12	familiar enough with its use to be qualified to
13	really
14	Q Because it says
15	A I could guess.
16	Q And the reason I ask is it says "now
17	deprecated created as part of an effort."
18	So I took deprecated to mean no longer in
19	use, but maybe I well, fair enough.
20	
21	A Yeah. I'm familiar with the service, but
22	can't really speak to its use cases or
23	Q How? What's your familiarity with the
24	service?
25	A It's a service that runs on top of
	Page 99

1	and basically is an application you can configure to
2	use for storing counters. Like an example I think
3	was given while we did talk with would be the
4	number of likes that a post has received.
5	Q All right. So then would you know if
6	third-party developers were just
7	Do you know if Facebook makes this
8	accessible or shares it off Facebook's platform,
9	access to this data?
10	A Yeah. I don't know. I don't know that
11	level of detail.
12	Q All right. I assume that's the same for
13	That's the same
14	A Yeah.
15	Q or is it different?
16	A Yeah. I don't remember the distinction
17	between these two. They're related, but I don't
18	remember how they differ.
19	Q TAO?
20	A Uh-huh.
21	Q I get what it is.
22	My question is, would you know if Facebook
23	makes it available or accessible or shares this data
24	in this the user data in TAO with any
25	off-Facebook platform?

1	A Yeah. I don't have, like, familiarity with
2	that and how that all ties together with the social
3	graph and to the question that you're asking. So I
4	don't know how that
5	Q Internal . It says it's an internal
6	tool, so I just assume it's not shared.
7	Is that an accurate assumption?
8	A Yeah. I I again, I'm not you
9	know, this isn't my area of work, but I think from
10	the description
11	Q All right.
12	A that's pretty clear. Yeah.
13	Q All right. I get what it is.
14	Would you, by chance, know if it's shared
15	or made accessible to
16	A No.
17	Q off
18	A Yeah. No. I don't know.
19	Q And then I assume it's not.
20	A Yeah. Yeah. You're right. So this is
21	more internally used to understand our our
22	products and systems.
23	Q And same with ?
24	A So right. So just to make sure we're on
25	the same, yeah, so this would be where
	Page 101

1	is our container-based service. So this
2	would be storage tied to those containers. So it's
3	more of a lower-level internal
4	Q Yeah.
5	A technology. Yeah.
6	Q Yeah. I would be surprised if you made
7	that accessible.
8	And same with
9	A Yeah. This is the backing, kind of, as it
10	says, backing database for TAO,
13	I don't know. Again, kind of like I don't
14	know the linking in terms of availability to the
15	social graph, but that's like the underlying, you
16	know
17	Q And the social graph
18	A storage.
19	Q And the social graph data sits in the TAO;
20	right?
21	A Right. So that's like kind of our primary
22	cache for driving our applications and a large part
23	of that is where the social graphing is.
24	But again, you know, I don't have like
25	the that's definitely not my area of expertise
	Page 102

getting to how those all tie together.
Q Yeah. And so where it says "used for
testing," is that internal testing for
A That is actually my understanding of it and
I did have some work with
is a bit dated to be truly definitive on that.
Q All right. Your notes would reflect it at
some level?
A Yeah.
Q And And
A Yeah. I'm not I'm not too familiar with
Q All right. What about
A Yeah. I'm not familiar with
Q Can you explain to me, what is human
readable? I hear the term a lot, human readable.
To me data is data I can read, binary or hexadecimal
or words.
A Yeah.
Q When they say "human readable," what does
that mean?
A I think that that's like written in a
common human language, you know, rather than, you
know, kind of encoded, you know.
Q But someone translates the coding to
Page 103

1	understand it; right? I mean, machine readable
2	means a machine can translate the data, right, or am
3	I reading that wrong?
4	A I can't
5	Q It's all well, human readable is still
6	data, right, and machine readable is still data?
7	There's no it's still data we're talking about;
8	right? There's no distinction there.
9	A Right. So I can't really speak to what
LO	whoever wrote provided this description is trying
L1	to convey with the human readable understanding
L2	piece.
L 3	But to your point, I think more relevant is
L4	that, yeah, for our exercise that we went through
L 5	and for the data we gathered, this is talking about
L6	data. And, you know, whether it's, you know, in
L 7	sentences that we
L 8	some kind of, you know,
	isn't
20	really relevant to the work that we did. We're
21	just, you know
22	Q Right. That's why I was asking.
23	A gathering data. Yeah.
24	Q This is the only place for user data that
25	it says "human readable." So I didn't know if there
	Page 104

1	was a distinction there.
2	A Yeah. I don't think any meaningful
3	distinction. At least not in the context of the
4	work that we were doing. We were just concerned is
5	there data? True/false.
6	Q Got it.
7	And then you wouldn't
8	Did they clarify if this human readable of
9	user interests to improve personalization in various
10	user-facing products, is that just Facebook's
11	products or is this available to all app developers?
12	A Yeah. I don't I don't actually know
13	about at that.
14	Q Wouldn't they differentiate or identify if
15	it was non-Facebook products or no?
16	A Yeah. I'd probably be speculating to say.
17	Q The people that wrote it and said
18	"user-facing products," they're talking about the
19	products that I'm just trying to understand when
20	they say "user-facing products" what the person, the
21	context they're responding from.
22	A Yeah.
23	Q You sent them a
	Is that
25	Facebook users or you're just not sure?
	Page 105
	they say "user-facing products" what the person, the context they're responding from.  A Yeah.  Q You sent them a  Is that  Facebook users or you're just not sure?

1	A I'm just not sure and I didn't
2	Q Okay.
3	A I don't think
4	Q I read
5	A So yeah.
6	Q And then a tax application?
7	A I'm not familiar with this product or this
8	service or system.
9	Q It's calculating taxes, right, for your
10	A Yeah.
11	Q So my question for this is do
12	you make available off the user data
13	in available to third off Facebook,
14	you know, accessible to or off Facebook platform?
15	A So yeah. Well, so is, again,
16	a lower-level storage solution that's used by
17	systems on top of it. So I can't really say, you
18	know. I don't know all the specific cases where
19	is being used as the underlying
20	storage. It would be through
21	Q But there's no way
22	A Yeah. It would be through a data system
23	running on top of
24	Q That's my point.
25	There's no way to access The
	Page 106

he
•
we

1	Q On its face, at least it seems to be.
2	A Yeah.
3	Q Okay.
4	A Uh-huh.
5	Q So I get what it is.
6	My question is, does Facebook make this
7	it's, again, a very broad description.
8	Who has access to this self-service
9	relational database?
LO	A Somewhat to the previous statement and the
L1	way you phrased it, this is applications product
L2	developed with provision, a MySQL database through
L3	this service, and there would be an application
L4	running on top of, you know, using tables that are
L5	in an instance. How that application manages
L6	that data is not known at this layer.
L 7	Q So my question is, for a user so the
L 8	user data, when they sent this back to you, how did
L 9	you figure out what was running on to actually
20	do something with it?
21	Because I can't imagine you query the
22	entire platform or the platform and
23	say delete this one user's data across 20, you know,
24	however many exobytes or whatever you have of data.
25	A Yeah. So the way it works with it's
	Page 108

1	self-service. So if I was an application developer
2	and I wanted to store, you know, using relational
3	database, I would go and I'd say I want to set up a
4	table or like, you know, provision some tables for
5	me, and it would be through that
7	In which case then, okay,
	Like how will those be meet
9	the requirements of the user data deletion policy?
LO	Q Then my question is, how many
L1	applications
L2	So but how, then, would they delete the
L3	user data off today? You can't. It would have
L4	to be by application, no?
L5	A So the the one example would be where
L6	the application only needs that data for, you know,
L 7	a short amount of time or some determined amount of
L 8	time. Let's say five days. And so they can
L 9	configure that. Like supports a setting that
20	says, you know, delete the data in five days or
21	delete these rows from this table after they're five
22	days old.
23	I don't know if that kind of speaks to the
24	question you're asking, but that would be, you know,
25	one case where through time to live you could

Q And you would assert
A delete.
Q Facebook doesn't share access to to an
app developer or anyone else that's not a Facebook
employee?
A Yeah. Yeah. No. And the way you phrased
that earlier is right. You would have to have some
kind of intermediary application interface to that
data.
Q Right.
And does Facebook allow third-party app
developers access to the database, data
warehouse?
A No.
Q Because is a database, no?
A Yeah. Basically you can you know, if
you want to run a MySQL database, it's kind of a
service that provisions those databases for you or
those instances of a MySQL database.
Q All right.
A So yeah.
Q So I It says "next generation."
Does that mean it hasn't been deployed or
A It is a from my experience with
yeah, it was in early phase of adoption, which would
Page 110

1	have been, I guess, a year or so ago and, as
2	I recall, it was, you know, kind of the an
3	improved version, kind of in the space of
4	like when we talked about those libraries where you
5	create pipelines.
6	Q And And
7	A Yeah. I'm not I'm not familiar with
8	this other than is for I think it stands for
9	Wi-Fi, but I don't I don't actually have any more
10	knowledge of that system.
11	Q But it's not a Facebook it's not by
12	using Facebook web, you know, social network, I'm
13	not using X, the Wi-Fi, am I?
14	A Yeah. Unfortunately, I don't know.
15	Q I get.
16	A Yeah.
17	Q And my only question is, is
18	accessible or available or shared with third
19	parties, the data instances from
20	A I don't actually know in that space.
21	Q But it does have user data, right
22	A It does. It definitely
23	Q when it's aggregated?
24	A Yeah.
25	Q And that's where it aggregates inferences
	Page 111

1	and everything, I guess?
2	A So yeah. is one of those that we had
3	previously called in our efforts general purpose
4	data. So where it's kind of like if you want a
5	relational database, go to III III you want a key
6	value store, you go to and you go through a
7	form and it's really serving very many, many
8	applications. Probably thousands of different
9	products and services are running on top of
LO	and using it. Again, it's just a very easy kind of
L1	self-serve key value store technology.
L 2	Q So then user data that's stored in
L 3	would be whether it's accessible or shared with
L4	third parties would be defined by the app that's
L 5	sitting on top of it?
L6	A So this is where it gets outside of my
L 7	expertise and access to the social graph and because
L 8	this would be. You know, some portion of this would
L 9	be.
20	Q Well
21	A Yeah.
22	Q Yeah. Some of it would power the social
23	graph.
24	The other question is, is there other
25	things? So the social graph provides all the data
	Page 112

1	and that's the DYI tool. If I spin up another
2	database instance on and make it accessible
3	to this doesn't feed into the social graph, but
4	does it have the ability to make it accessible to
5	third parties or share the data that's stored in
6	that instance of the you know, the database that
7	you build that doesn't feed the social graph, but
8	sits outside of the social graph?
9	A Right. No. It would not be.
10	Like maybe restating, I'll state it like
11	what I understand.
12	If you set up an instance, you get a
13	provision some portion of and external,
14	outside of Meta's infrastructure, would not be able
15	to access the system to use directly. There
16	would have to be an internal Meta Meta system
17	that provides an interface to that data that serves
18	
19	Q Yeah. So there would have to be a Meta API
2 0	that's not social graph that would give direct
21	access to that dataset?
22	A Right. Right.
23	Q Yeah. Makes sense.
24	And who would have access to the API? Who
25	controls the APIs that grant access like that?
	Page 113
	- J

1	A I'm not I don't actually know.
2	Q I assume it's one of those code repository
3	data information. At some level, there has to be
4	some a security has to track the API access
5	that's granted. Okay.
6	A Yeah. I think that's a fair assumption,
7	but I don't know.
8	Q Well, they wouldn't let I mean, I hope
9	so.
LO	A Yeah.
L1	Q and that's internal
L2	training for the Instagram machine learning or is
L3	that available to third parties?
L 4	A I'm not familiar with that system to be
L 5	able to say.
L6	Q Okay. I thought it was alphabetical, but I
L 7	was unduly excited.
L 8	This is Instagram. Again,
L 9	is this do you know, like, how this system works
20	and if Facebook makes the data in it accessible?
21	A No. I'm not familiar with
22	Q But it's just Instagram data; right?
23	A That is my understanding from the
24	description.
25	Q And then
	Page 114

1	A Embedding indexing system. Yeah. I
2	don't I don't know anything about this system.
3	Q .
4	A That's a mouthful, but
5	Q I didn't know what a privacy-wave task was
6	and what a user was.
7	A Yeah. So, yeah, I can clarify those.
8	So privacy-wave is a privacy-wave task.
9	Privacy-wave is a framework program that essentially
10	federates work across the company. So this is
11	where, for example, when they want to find out,
12	you know, who you know, if they want to reach all
13	of the applications and products teams that are
14	using, they would file those through these waves.
15	And so it's like kind of a central tooling that you
16	can get, you know, thousands of tasks, and tasks are
17	internal ticketing system, you can get thousands of
18	these tickets centrally managed and then track the
19	progress. Because it's so highly distributed across
20	the company, you know, you have hundreds of teams
21	potentially and thousands of employees that have to
22	take some action. So that's kind of privacy-wave.
23	And then the user verification/mediation,
24	that would be referring to the task owner. So a
25	Meta employee.

1	Q Okay. Good. That's all I need to know.
2	All right. Then public street-level
3	imagery and map data platform. I wasn't sure how
4	user data is involved in that and if third parties
5	can access the mapping system.
6	A Yeah. I'm not I'm not familiar with
7	that system at all.
8	Q All right. A few more.
9	A Homestretch.
10	Q
11	A Yeah.
12	Q I assume that's internal customer support?
13	A So that is internal customer support.
14	However, I don't know if they have any kind of
15	relationships that would provide, you know, external
16	access.
17	Q That's fine.
18	what's that stand for?
19	A I think it's the
	similar to
21	of rolling up binaries.
22	Q And when it says it's owned by
23	Core Systems, what's Core Systems?
24	A That's a division of the company or
25	organization within the company.
	Page 116

1	MR. GARRIE: Okay. All right. So that was
2	all of them. I will review the transcript rather
3	than making you stay on as we go through it all.
4	I thought about it for a minute and what I
5	was hoping, Mr. Pope, if you could go to a separate
6	room for a minute or two and I can just speak with
7	counsel, and then we'll bring you right back in. I
8	just think that may if that's okay. Obviously if
9	counsel from Facebook wants to go with Mr. Pope or
10	stay, feel free. But I just want to talk to the
11	lawyers directly.
12	You did excellent, Mr. Pope. This was
13	extremely helpful in understanding and I really do
14	appreciate you taking the time.
15	THE WITNESS: I'm glad I was able to help
16	you.
17	MR. GARRIE: If you could jump into that
18	other room before. I just want to talk to the
19	lawyers about potentially additional questions or
20	other things; but rather than you hearing them, I'd
21	rather just understand what may be sought.
22	THE WITNESS: Okay. I'm leaving now.
23	Thank you. I'll be in the other room.
24	MR. GARRIE: And, Counsel Chen, or anybody
25	from Facebook, feel free to stay or join.

1	So, Counsel, you can turn your video back
2	on.
3	So thank you. Counsel or Martie, thank
4	you. It was actually extremely, very helpful for
5	me, at least, to get my way through all of it.
6	I will open this with a lot of well,
7	plaintiffs, if there are any other particular
8	follow-up questions that you think may be
9	appropriate, I'm willing to hear them. I'm not,
LO	per se, willing to ask them, but I'm certainly
L1	willing to listen.
L2	MS. WEAVER: Right. I mean, we're very
L3	appreciative of Mr. Pope's time and understand the
L4	limits of his knowledge.
L 5	I think in terms of framing for us,
L6	recognizing that not all data is actually
L 7	maintained, but there are some records, that is,
L 8	there were facilities that collect and made data
L 9	available, but those facilities probably are not on
20	the data source list.
21	And so we think the kinds of questions are,
22	you know, do these sources have either information,
23	what is it, is the information in those sources used
24	in any products that have been made available to
25	third parties?

1	So some of these questions about is this
2	data available. Like we know, for example, that
3	
6	So the simple question of is there data
7	sitting here in this source and does this source
8	make it available will miss some obvious
9	opportunities to learn about what is made available.
10	MR. GARRIE: For Mr. Pope?
11	MS. WEAVER: Yeah. We don't know what
12	Mr. Pope
13	MR. GARRIE: Well, Mr. Pope stated up front
14	that he's not the person with the answer to that
15	question; right?
16	He said that he asked the simple binary
17	question, true or false. And data, user data in
18	this system, like or some of these
	, I'm assuming of data and
20	they have applications that, like you said, you can
21	
	, but, as he repeatedly stated, he
23	doesn't have that knowledge. So it wouldn't be
24	appropriate to ask him if it is appropriate or not
25	or so on and so forth.
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1	I understand your point and we can talk
2	about that in a minute, but I do want to let
3	Mr. Pope go before we go down into that part of the
4	conversation since I did have a chance to read the
5	court's transcript on this.
6	So, counsel for Facebook, are there any
7	questions you'd like to ask Mr. Pope as a follow-up
8	that I may have forgot to ask? I can't imagine
9	there is, but maybe.
10	MS. CLARK: No. I don't think there are
11	any other questions that need to be asked.
12	I will just state for the record that we
13	request the transcript as marked highly
14	confidential, attorneys' eyes only, because there
15	was a lot of very confidential information.
16	MR. GARRIE: Yeah. So noted. And I'll
17	leave that for the court to work out if the parties
18	want to challenge any designations and so on and so
19	forth.
20	MS. WEAVER: We understand that and we
21	appreciate what has been shared today, and we'll
22	honor the designation.
23	MR. GARRIE: Okay. So I found it extremely
24	helpful.
25	But first, why don't we let Mr. Pope go,
	Page 120

1	and then we can resume the second part of the
	<del>-</del>
2	conversation. Since I have everybody here, maybe I
3	can streamline some of that as well now that I've
4	read the court's transcript.
5	So can we bring Mr. Pope back in? Maybe
6	counsel wants to go and tell him I'm going to bring
7	him back in. I'm sure he loves lawyers. I just
8	don't know how much exposure he has to counsel.
9	MS. CLARK: I'll go in.
10	MS. WEAVER: I'm not sure anyone does,
11	but
12	MR. GARRIE: Mr. Pope, I wanted to thank
13	you and let you go enjoy your Friday and your long
14	weekend, and thank you very much.
15	I may follow up with some additional
16	questions for particular systems
18	I, frankly, have to read the transcript to process
19	everything because we did cover a lot of data. But
20	I do really appreciate and am grateful for you
21	making the time, and it was extremely informative
22	and helpful.
23	So have a good rest of your weekend and
24	enjoy.
25	THE WITNESS: All right. Well, thank you.
<b>4</b> 0	THE WITHESS. AIT TIGHT. WELL, CHARK YOU.
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```
1
     Thank you. It was my pleasure, and you're welcome.
     Have a great weekend.
 2
              MR. GARRIE:
                           You, too.
 3
              THE WITNESS: Okay.
 4
 5
              MR. GARRIE:
                           Thank you.
                     So I read the judge's transcript and
 6
 7
     I did read the orders. I got lucky that my other
     hearing this morning ended two and a half hours
8
9
     early. I'm not nearly as lucky now.
              The question I have after reading it and,
10
11
     Counsel Weaver, to your point, so let me reiterate.
12
     The whole purpose here is to determine a very narrow
13
     issue, right, of determining the nine -- and I'll
     read what she said; right? Page 29 of the
14
     transcript says, "Facebook's portion is the only
15
16
     named plaintiffs. We're only talking about the
17
     named nine now, nine named plaintiffs, which is
            That the only data that is discoverable is
18
     fair.
     that which Facebook intends is shared or made
19
     accessible; and if Facebook says it was not shared
20
     or made accessible, that is the end of the matter."
21
              MS. WEAVER: But her order says this;
22
23
     right? "Apart from the court not having limited
     discovery of each named plaintiff's data to only
24
25
     data Facebook concedes it shared with third parties,
```

1 the court finds that such a limitation is not appropriate. As the court previously noted, how 2 Facebook uses the data it collects about its users 3 is an open question. The first step in answering 4 5 that question is to identify the data it collects about its users and specifically what it has 6 collected about the named plaintiffs." So asking Facebook --8 9 MR. GARRIE: I was just about to read that part as well, but thank you for reading it into the 10 11 record. 12 MS. WEAVER: Good. 13 MR. GARRIE: So looking at her order and the additional clarity she did provide, from the 14 systems we just heard about, I think I -- I'm going 15 16 to read the transcript -- maybe 15, maybe 10, maybe less. I think of them all, there's probably three 17 or four where that conversation, you know, Facebook 18 may need to go back and give further clarification 19 20 or answers. I could be wrong. I have to actually read it. We did cover 149 systems. So I'm going to 21 22 reserve rights. 23 But I do think that understanding particularly the ones around -- well, the ones he 24 25 couldn't answer, like around the ad networks, around

1 the very large data warehouses where he was -- and 2 the concern -- and this is all hypothetical. I'll 3 just be very clear here. It sounds like Facebook has the ability to 4 5 answer the questions. I want to do this in an 6 iterative, reasonable fashion where it's focused but reasonable, and resolves how the judge framed the issue. 8 9 So the first step, from where I'm sitting, is to go from 149 to a whole lot less; and then from 10 11 the whole lot less, get further clarification from 12 Facebook about what those systems actually do 13 because it sounds like to me some of these systems are massive data warehouses that have lots of 14 15 databases or tables, of which there are 16 applications, that basically they build an 17 application and then they access the table, right, and they provision that access. 18 The question is, to get access to that, 19 right, Facebook probably, the security team, has 20 21 some way of tracking who's coming inbound to 22 Facebook to get data queries for those particular 23 systems that have user data. At least that's what I'm thinking. I could be completely wrong here, but 24

I'm trying to come up with a simple way that --

25

because Facebook already has to secure and track and
monitor to make sure there's not unauthorized access
to user data. So there has to be some sort of form
or function of logging the record keeping that's
kept somewhere about what data is going inbound or
outbound, but only for the narrow subset of systems
as the judge has narrowed and clarified.
MS. CLARK: Mr. Garrie, you know, we want
to do everything we can to help you with all this
list, obviously; and if there are specific sources
that you have questions about, we will do our best
to get back to you on those questions as quickly as
we can.
What I understand Mr. Pope to be saying is,
you know, how quickly a question could be answered
would depend on the question itself. Some are a bit
more complicated. Some are easier. Some of them
his point of contact might be able to answer. Some
of them his client contact might need to go to
various other people to answer.

So I think we'll just need to understand what the information is you're looking for and for which source, and from there we can gauge what work would go into answering the questions.

MR. GARRIE: Yeah. And what I'm trying to

1	do is limit the work.
2	So the way I envision this is I'll identify
3	a subset of systems
	. According to
5	him, he'd be able to tell me what data could be
6	
	, you know,
8	needs to be that he said
9	was .
10	. So my
11	goal is to narrow it to a subset of the 149, get the
12	after counsel's
13	reviewed them to make sure, then use that to better
14	understand what we're talking about. Like the
15	systems he had no idea about, hopefully the
16	sufficient amount of
17	detail.
18	And then from there, if necessary, I'll
19	follow up with additional questions again using the
20	way the judge has defined what is in scope and what
21	is out of scope.
22	MS. CLARK: I just want to
23	MS. MUMM: Can I clarify?
24	Yeah. Certainly we will follow up with
25	whatever questions you have and do our best to
	Page 126

1 ansv	wer them, but it is not our understanding that
2	
It's	s just a yes-or-no question as to whether it may
	the definition of user data.
5	
	And then the next level is
9	MR. GARRIE: Well, I think he said that
0 they	y also identified. I thought that was the
1	
3	That's why I want to see the
4 I co	ouldn't I wasn't exactly sure. I'm trying to
5 make	e this as seamless as possible based on what
5 you'	've already done because it sounds like to me
1	MC MIMM. Our understanding is that the
	MS. MUMM: Our understanding is that the
	ormation he has does not relate to what
3   in t	the sense that you and I would talk about it,
4 but,	, rather, how that
	; right?
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1	The focus is very much on accomplishing that end,
2	but then but again, you know, I think to the
3	extent you want to narrow the data, we can work with
4	Mr. Pope and identify what he has. We just don't
5	want we don't want to, you know, set expectations
6	that are not in line with what we understand the
7	
8	MS. CLARK: My understanding of the
9	MR. GARRIE: Yeah.
10	MS. CLARK: process.
11	MR. GARRIE:
	All I'm trying to
13	do is avoid having to talk to a hundred like,
14	I'm already convinced I don't have to talk to more
15	than like 15 or 18 people, but what I'd like to do
16	is talk to two or three or follow up with just a
17	handful of people rather than have an extensive
18	back-and-forth attempt at spreadsheets again.
19	I'd rather just see what's been done
20	because what I'm not trying to do is make Facebook
21	go and do a bunch more work to just answer my
22	question about what to answer the judge's
23	question, frankly, which is pretty salient, which is
24	what and I just need to think about I got to
25	review the transcript, see again what the judge

1	ordered, and then ultimately narrow it down to a
2	subset of systems for them either to request
3	Facebook to provide that information about it
4	because the judge is pretty the order is now much
5	clearer from what it was; right? There's no
6	she's removed a lot of the ambiguity there, and then
7	get that information, and that's how I think I'd
8	like to proceed.
9	If I can get a rough of the transcript. I
10	don't need a final rush. A rough is more than
11	enough just to look at it, to go through it. And
12	then I will likely issue we have a status
13	hearing. So maybe I'll do it there or I'll issue a
14	supplemental order. Hopefully we can just do it at
15	the status hearing accordingly to move it forward
16	to just get that done based on the judge's
17	direction.
18	I do like the idea of a status hearing. I
19	do like that.
20	MS. CLARK: Thank you. And we appreciate
21	your scheduling that.
22	MR. GARRIE: Counsel Weaver?
23	MS. WEAVER: Thank you. I apologize.
24	We, plaintiffs, would like the opportunity
25	to review the transcript ourselves and have our

1	experts review it before you issue a final ruling;
2	and if you could build in a procedure for that, we'd
3	be grateful.
4	We haven't had an opportunity to weigh in
5	yet on any of the declarations that have been
6	submitted or any assertions that are being made by
7	Mr. Pope or there are other folks who put in
8	declarations as well.
9	So we would request an opportunity to, at
10	least, weigh in on these data sources and what we
11	think they reveal before you issue a final ruling.
12	MR. GARRIE: Okay. So noted for the
13	record.
14	MS. MUMM: And just to clarify, I don't
15	have the protective order in front of me, but I
16	think that there's some limitation on the ability of
17	experts who are being disclosed at this time, but I
18	don't have it in front of me.
19	MR. GARRIE: Wait. Wait. Time-out.
20	Time-out.
21	I don't want I assume everybody's
22	experts are following all the rules that the parties
23	have set forth and required and defined as; and if
24	there is any indication that hasn't been the case,
25	feel free to raise the issue separately.

1	I will take your issue, Counsel Weaver,
2	under advisement and think about it. I just want to
3	read the rough transcript, read her order again,
4	read the transcript again, and then come up with a
5	game plan and roadmap that's actually feasible
6	because she issued three or four four orders.
7	So I'm trying to do all of that and move it all
8	along.
9	So that's kind of where my headspace is.
10	I'm not opposed to hearing from your experts or
11	having them weigh in. I just want to make it in a
12	methodical way so you don't have to do it more than
13	once and Facebook doesn't have to respond more than
14	once. I'd rather get forward until that point.
15	And then rather than issuing a formal
16	order, can you ask Mr. Pope for
	that he sent
18	out and just circulate it?
19	MS. CLARK: My understanding, and Ms. Mumm
20	can chime in a little more here, is that there is
21	
23	MS. MUMM: Right. That's what he said
24	during his questioning and that was our
25	understanding.

1	So if you can specify the systems you're
2	interested in,
4	MR. GARRIE: Okay. And what about just
5	what user I mean, he had to use the same
6	definition of user data.
7	MS. MUMM: We can follow up with that. I
8	think that that might be
9	MS. WEAVER: One
10	MR. GARRIE: Because if it turns out
11	MS. WEAVER: Go ahead.
12	MR. GARRIE: Go ahead, Counsel Weaver.
13	MS. WEAVER: One question that we on the
14	plaintiffs' side had is the timing for these data
15	sources. It sounded as though the testimony that
16	came in today, that this list was prepared maybe a
17	year ago and we don't know its scope. Certainly
18	our class period began in 2007. I don't know if
19	this is what was prepared and if it was a year ago,
20	whenever it was, but it is a question to be
21	answered.
22	Are there other data sources that are not
23	active that might contain older data for some of the
24	plaintiffs? I just don't know because this was not
25	collected for this case. It was collected for

1	another purpose.
2	MR. GARRIE: No. I agree. It's noted for
3	the record.
4	Counsel Mumm, did you want to respond?
5	MS. MUMM: Yeah. I'll just note for the
6	record that our ESI protocol indicates that we're
7	not required to collect or produce some off-line
8	statements questions.
9	MR. GARRIE: Noted for the record and not
LO	lost on the special master.
L1	The other question I had is I got your
L2	post, Counsel Kutscher Clark, and I just want to
L3	make sure. The ,
L4	you're going to start producing the report; right?
L 5	I just your counsel, Alex. I forget his last
L6	name. Counsel Alex is in the process of reviewing a
L7	report for privilege, but there will be a rolling
L 8	production starting when exactly? I didn't see a
L 9	date.
20	MS. CLARK: I'm sorry. I misunderstood.
21	You were referring to Alex Cadwell.
22	We're working on it currently and we expect
23	we will start the production next week. We're in
24	the process to get them collected and into the
25	database, but that is all underway and the wheels
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1	are in motion and they should start going out the
2	door next week.
3	MR. GARRIE: Okay. And I have no problem
4	with the reconsideration. That's fine. I will
5	respond to plaintiffs' request to be heard on their
6	motion for reconsideration.
7	Any other issues plaintiffs or Facebook
8	want to raise? And I declare an impasse. Well,
9	spoke to Judge Andler and we moved that along as
10	well. I posted that, I believe, yesterday or this
11	morning or I emailed at some point the impasse on
12	those two issues.
13	So, I guess, Plaintiffs, anything you'd
14	like to cover since I have everybody here?
15	MS. WEAVER: I think that's it. Just to be
16	clear, it's not so much responding to the motion for
17	reconsideration as to have an opportunity to weigh
18	in on the collection of data sources and in light of
19	Judge Corley's order what's within the scope of
20	discovery.
21	MR. GARRIE: Yeah. I fully yeah. I
22	understand.
23	MS. WEAVER: All right.
24	MR. GARRIE: Counsel for Facebook?
25	MS. CLARK: I think we are all set. Thank
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1
     you.
               MR. GARRIE: All right. We'll go off the
 2
 3
     record.
 4
                                  * * *
         (Whereupon, the hearing ended at 3:21 p.m. PST)
 5
 6
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#### HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

1	CERTIFICATION OF COURT REPORTER
2	FEDERAL JURAT
3	
4	I, the undersigned, a Certified Shorthand
5	Reporter of the State of California do hereby
6	certify:
7	That the foregoing proceedings were taken
8	before me at the time and place herein set forth;
9	that any witnesses in the foregoing proceedings,
10	prior to testifying, were placed under oath; that a
11	verbatim record of the proceedings was made by me
12	using machine shorthand which was thereafter
13	transcribed under my direction; further, that the
14	foregoing is an accurate transcription thereof. I
15	further certify that I am neither financially
16	interested in the action nor a relative or employee
17	of any attorney of any of the parties.
18	IN WITNESS WHEREOF, I have this date
19	subscribed my name: Date: January 25, 2022.
20	
21	
22	
23	Vouchale vilan Fulne
24	Michelle Milan Fulmer
25	CSR 6942, RPR, CRR, CRC
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# Exhibit J



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January 6, 2022

#### VIA JAMS ACCESS

Re: In re Facebook, Inc. Consumer Privacy User Prc file Litigation, 3:18-md-02843

Dear Special Master Garrie:

Pursuant to the Special Master's Amended Order re: Plaintiffs' Motion to Compel Production of Plaintiff Data, Facebook has enclosed a document containing descriptions of the 149 data systems identified in the Declaration of David Pope as storing or interacting with user data. Consistent with the Special Master's Orders and statements on the record, the descriptions Facebook is providing consist of existing materials prepared by Mr. Pope's team in the course of its work, which was unrelated to this or any litigation.

Facebook has not identified additional existing, readily accessible materials identifying (1) "a description of the types of Named Plaintiff data contained" in each data system; or (2) the "most common functions and purpose" of each data system or "the business units, divisions, or groups" that use the systems. Where Facebook has not been able to provide additional data, Facebook has provided an explanation as to "why this information is not readily accessible," as required by the Order.

Facebook is providing this information pursuant and subject to the terms of the Protective Order that was negotiated by the parties and entered by the Court in this action and has marked this submission Highly Confidential – Attorneys' Eyes Only. These confidential materials are being submitted pursuant to the Special Master's Order for use only in connection with the parties' dispute as to the production of data relating to the Named Plaintiffs, and without prejudice to Facebook's rights and privileges.

The Special Master has also ordered Facebook to make Mr. Pope available ex parte on or before January 14, 2022. Mr. Pope is available from noon PT to 1 pm PT on January 14, 2022.

Respectfully submitted,

/s/ Laura C. Mumm

Laura C. Mumm

## **GIBSON DUNN**

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cc: Lesley E. Weaver

Derek W. Loeser

Enclosure

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Files with salted and hashed Facebook users' PII are stored in this data store. The data store is used b	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	This is used in the delivery flow for targeting, ranking features, and as information for front-end to display. The social system is not, however, a general purpose system like ————————————————————————————————————	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plainitfs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a real-time service that performs a join between different event streams and features, is the core of the training data preparation flow. It is a realtime joiner of ads events to prepare training data for ads ranking models. The ads events include features, impressions, clicks, conversions, and (mainly) negative-feedback events.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a resulf, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
(Mysal)	It is the backbone for the Core Ads system not only just Ads buying but also other critical consumers of the etc.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook as a construction of the data system and vetting further detail about each system would require a similar effort that would be dispropriorianate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a set of components that together form the platform storage layer in system to provide distributed file system storage. As a common platform layer, this is used by multiple teams across Adsorg for various business applications for data storage needs.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
Akkio	Akkio Locality is used to improve latencies and reduce replicas for usecases across different datastores. We do this by tracking which regions each ushard is being accessed from and limit the replicas for each ushard to three (or some configurable) number of regions.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Serves ad-side and user-side features for AdFinder, AdPublisher, Prospector, FBShops	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	The internal metadata is in MySql and follows general MySql backup flow.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a comprehensive list of the system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is Facebook's end-to-end distributed tracing system that provides observability into the execution of requests.  We support traces across systems (web, mobile, and services) and provide a general purpose platform for near-real time analysis.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool (the DYI tool (the DYI tool) (the DYI
	provides a  These can be facts implicitly learned from other places in Facebook - user profile, Messenger chats, etc, or explicitly provided by the user to the asset as part of a dialog.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool tretrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is not really a data store per se, it is a platform that allows users to schedule jobs, mostly from code, to be executed outside of the path of a request, thus asynchronously.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Storing application data for the app (which is a zero to one app that provides a social rapping experience)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system".—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
70	To identify the user, provide scores/leaderboard, connect players to other players, and provide analytics data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	s a snapshot and shadow testing framework used for functional, correctness and performance testing of Spark, Hive and Presto.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	etrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	It is used to query and analyze internal data, produce visuals of analyses and share them with others.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
BigBox VR (M&A)	A system that provides game player and play data support.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that so would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is the project to use the Presto engine as the backend for Atlas Reporting.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a team within dedicated to the performance and delivery of media content of all Facebook products such as Facebook, Instagram, WhatsApp, Oculus and more.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DY tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is a distributed scheduler for cron-like jobs (aka bash commands)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook as a not collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY) tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is an inventory estimation used to estimate the number of users that can be reached given one or more targeting criteria. It is mainly used by advertisers trying to target their ads to the right audience.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Serves Facebook use cases for user - entity features and scores	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Powers the application. s a standalone app for creating music video content collaboratively. The data stored in our system is mostly user data (e.g. posts, comments, etc).	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plainiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Provide tools and storage to author, test, and distribute configuration data	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to Identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Provide automated testing of FB developed hardware	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the 'most common functions and purposes of the data system' and a comprehensive list of 'the businesse units, divisions, or groups that use the data system'—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defense and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is used to store contributors and contains data keyed off of the  ) that allows for real-time attribution.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a comprehensive list of the data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	etrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a digital asset management (DAM) tool, sometimes just referred to as a DAM. Properly speaking a DAM is a digital tool for asset management	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	provides efficient disk-based sort-merge for warehouse queries at FB scale.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is an in-memory realtime analytics database that enables users to execute sub-second moderately complex SQL queries on tables up to	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and an an analysis of the course of the case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	The DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a fault tolerant scalable workflow solution, designed to let people specify a series of steps to be followed and then ensuring the steps lead to an expected conclusion.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is an interactive tool for querying multiple data sources at Facebook	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	s the backend platform that Ads Products use to build "Audience Segments".	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook as the data system and verting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY) tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
TI T	tier 0 backups needed to recover critical infra & network	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
Dataswarm (Gluster FS)	Dataswarm is a data pipeline platform. A data pipeline is a set of data processing operations, where the output of one operation is the input of the next one.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a comprehensive list of the data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—  [the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	WhatsApp's Deletion Service	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	The sea abstraction in our www codebase for reliably deleting data graphs from online data stores and being able to recover efficiently from errant deletions if they're discovered quickly enough. It's our main system used to satisfy our User Data Deletion Policy for data stores which support point deletes.		(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	Generate signals from ad delivery that can be used to provide advertiser guidance	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	It is a Core Systems infra service which allows other infra/product teams build dependencies between FOQS queue items.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook as the data system and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a mySQL database that runs on a developers devserver.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	The DevOps Investigations team tackles various data-abuse related escalations and instances, ranging from	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	) is a compute engine for large-scale graph analytics.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
Downpour Interactive (M&A)	User accounts game player data for Onward from Downpour	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a simple, reliable, low dependency object storage system, with only four high-level operations: put, get, delete, and list.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
(Novi)	(Novi) is a fast scalable eventually consistent point-in-time structured storage for Novi / F2 risk and compliance assessments	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "alf" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	The Team is focused on delivering scalable storage solutions to supporthe applications and virtualization environment that run the internal business at Facebook.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the data system and vertified the system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is int or relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	Index database focused on low latency search. Primarily an open source project being supported at Facebook.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	provides durable, DR compliant, and highly available online storage, We aim to provide solutions to some of the hardest distributed storage problems in the industry at scale,	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
F3	The Facebook Feature Framework (F3) is Facebook's next generation feature engineering platform.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Paliaritifs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
(MySQL)	Iris (alka Generic Iris) is a persistent queue service that guarantees in-order delivery to either devices or backend services.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a top-level directory of the federation of projects, written in a number of languages.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
FBLearner / Al Infra (	Enables all Facebook engineers to build AI applications and perform AI researches by providing scalable, reliable, efficient, easy-to-use and compliant AI services that power all parts of AI workflow, from feature engineering, to training, to inferencing, during both experimentation and model productionization.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is a system built to	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a could be disproportional or the first of the system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is Facebook's scalable binary distribution system.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	if the DYI tool tretrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
Foas	FOOS powers the Tier for job processing. It provides a number of features important to that use case including prioritization of items, a lease expiry for items in the queue, and explicit timing for when an item in the queue is ready for processing.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	running (https://apps.apple.com/us/app/id1509378877)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is an eventually consistent key-value data store fully implemented in Erlang and designed to run within WA infrastructure. It can run embedded within the backend itself or as a remote tier managed by	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—In the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
	provides tooling to support external research initiatives. tooling primarily consists of a customized JupyterHub deployment that provides restricted access to datasets.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—In the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	For teams to track goals information (objectives, outcomes, metrics for how to measure success)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
Hive	"Hive" refers to several separate systems at Facebook: Hive Tables: Also called Data Warehouse, Hive Query Engine (also called Corona): An engine that executes queries written in FB-HiveQL, and Hive Query Language (HiveQL): A query language data analysis.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	As Facebook has disclosed previously, Hive stores millions of data sets that it uses for internal analytics, product development, and other business functions. As discussed in detail in the Declaration of Mengge Ji,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is a data store used to store offline data for analysis	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to Identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY) tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Storing user data to deliver a live streaming Q&A type of experience for a stand alone product.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "alf" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retnieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	A general purpose key-value storage solution that can handle high write traffic and store huge data in a highly efficient way.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the description of the data system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a resilient plain-text chat protocol widely used by our engineering teams.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
_	is an end-to-end solution for location-anchored content discovery for World AR. At the core is Ger Indexing, a component for retrieving content based on lat/long positions and 2D polygons.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
Laser	Laser is a service that indexes data in <b>Hi</b> ive and to provide high throughput, low latency lookup.  Use this for indexing warehouse data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
■ (MysqL)	is a hostname-scheme that exists to run Logtailer Servers.  across racks to allow that Logtailers can always be allocated in the different racks as the MySQL instances they are tailing from.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook acceptable of the data system and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
(MysQL)	is a hostname-scheme that exists to run Logtailer Servers is a system within this framework.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or detenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what
_	is a fast in-memory storage of all our action/object ranking data. stores action metadata, keyed on actor ID.	and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
	is an in-memory cache for actions and objects. More accurately, it is a meta-data cache since it doesn't actually store any physical objects such as photos or posts.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	Reviewing Content that Governments think should get taken down form FB or IG	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Live streaming Infra.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Deliver five video to viewers	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	Transcode live video with high quality efficiently, reliably, and low latency.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the 'most common functions and purposes of the data system' and a comprehensive list of 'the business units, divisions, or groups that use the data system'—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify 'all' user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Provide a cache for resources available internally at facebook	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—In the course of its prior efforts to inventory its data systems. Facebook as a not collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a new experience to enable reliable realitine storage and efficient search and retrieval for unstructured logging data generated by all applications across Facebook.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

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	is a distributed data store for sequential data. It offers high durability and availability under a variety of workloads and failure scenarios.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook descriptions of the data system and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
	abstracts away the complexities of using dictionary-based compression. It does all the required state management internally (sampling, training, benchmarking, distributing, versioning, garbage collecting, etc.), exposing the same, simple, stateless interface you expect to see from a compression algorithm.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a managed horizontally scalable BLOB storage service accessible via Thrift and HTTP. It is analogous to Amazon S3.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the businesse units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.
Memcache	Memcache refers to our implementation of memcached, along with its associated client libraries and APIs. Memcache was initially deployed as a distributed in-memory caching layer between the web tier and MySQL	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the businesse units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could

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	Managing metadata for Data Warehouse	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is the next-generation mercurial-compatible version control server (to scale our monorepo	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	A thrift service that composites audio and video streams and connects RTC infra with Live Infra.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the data system of the data system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
Mysal	The MySQL team works to keep all MySQL databases up and running 24x7. We also handle the lifecycle of database assets, and various services to support MySQL at scale.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.

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	Small entrepreneurial teams building standalone app experiments.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
Novi	is a queueing system storing user data,	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DVI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
Oculu	Logging for understanding user interactions on Explore, Store, and other Oculus surfaces	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the course of the prior efforts to inventory its data systems. Facebook and the data system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Storing offline messages	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unitelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

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_	■ allows you to focus on the problem of "storing/reading a few bytes" at a basic level. It provides the user writing the data with the flexibility to store the bytes on the storage systems of their choice, while solving the reader's "where do I get that data" problem.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a data storage and sync service, which supports periodic polling as well as real time updates to the Facebook family of apps. Today, it powers various product features such as Messenger Contacts, Messenger Stories, Mobile Config etc.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—  (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	Used for Lift and allows for a real-time join between opportunities (as well as some impression and click data) to conversions.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	ithe DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
(MySQL)	contains historical transaction data, primarily from the time frame of 2009-2014, that is generally unused.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
(MySQL)	teams are part of the Facebook Financial (F2) Org and power all across all products and family of apps.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plainfifs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data, if
	supporting users throughout the company.	As discussed in the Declaration of David Pope. Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—In the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plainfifs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
(Viewstate)	Cache for the newsfeed data	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Root cause analysis for metric movements (ex: Why did Facebook DAP go down between today and 7 days ago?)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is a storage service ontop of designed to store user side features.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems, Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to Identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.
	Power user presence (green dot) for Facebook, Instagram and Messenger users.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify."all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.
	is a a fully managed general purpose Stream Processing as a service solution (i.e. real-lime data-processing).	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.
	It is used to load realtline data into our leaf machines	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Aggregation of call logs of different types by client session (i.e. one call connection) and call.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems, Facebook    and collecting and vetting further detail about each system would require a similar effort tha would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI too) retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data,
	Stores user interaction with the feed(i.e. all the stories user has seen)	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to
Ready at Dawn (M&A)	Ready at Dawn is a video game studio acquired by Facebook.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort the would be united to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a data pipeline used for payment reconciliation	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
			The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—
	provides network attached data volumes to compute nodes, allowing services to scale	purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and verting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
		responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that	
		use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—
_	is a distributed, buffered, named pipe that serves as the entry point to most of the data ingestion pipelines at Facebook.	purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a could be disproportional to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool) (the retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that	
	The UI is a tool for interactively querying and visualizing data without writing SQL,	use the data system:—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
	Blob Storage System for storing backups of other systems in secure environment	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—  (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	a system to allow agents (humans and bots) to chat with customers	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

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	Performance and Efficiency regression A/B testing platform.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
SFTP	SFTP is a service provided by the EPI team that allows Facebook to exchange data within the company and also with external vendors.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—  (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a service that captures all incorning traffic on a MySQL instance and replays it on another test MySQL instance in real time.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook as the data system and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such date could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine types of user data are contained within each data system and whether an individual user's data tould
	Run batch data processing jobs over msgdb	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

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(Novi)	We store user's balance and transactions for the Novi wallet.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Incuding descriptions of the "most common functions and purposes of the data system" and a comprehensive list of the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and verting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to Identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to be identified within that data.
	candidate generation for recommendation ranking system	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
_	is an application developer review tool meant to investigate cases where app devs could be misusing user data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a general purpose Stream Processing library (I.e. real-time data-processing).	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the data system and the data system and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plainiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
<u> </u>	Openstack is an object storage service being provided by the aimed to be a low cost solution for archival workloads such as backups and data warehousing.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Paliaritifs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	ithe DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a distributed transactional storage system designed to give full composability across data structures, transactions, and storage encoding.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a comprehensive list of the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
Tableau Server	Tableau is a business intelligence tool used to create charts, graphs, and other visualizations.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a special variant of now deprecated created as part of an effort to consolidate the non-replicated FQDB offering to core-data, SRS has two independent instances for feet tracking data and featuredb storage.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
_	can be seen as real-time counter service. It keeps statistics about streams of events, such as counts, unique counts, quantiles (percentiles), mean, and top elements, and it allows dynamic time window queries in real-time.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook in the data system is described in the data system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI too) retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could t be identified within that data
	is a real-time counter service for high volumes of data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
TAO	TAO is a high-performance service for storing, caching, and querying the graph of FBObjects and associations.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups tha use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort tha would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.
	Internal tool maintained by Global security to protect Facebook, executives and assets.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and it is a collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—
	is a backend system that persists all actions by users and pages and indexes them chronologically.	use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DY) tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a platform that leverages distributed tracing to collect service performance metrics and dependency context on a per-request basis across FB infrastructure.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  a, and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be	retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a managed deployment system for internal backend services.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a backing database for TAO for user data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	This is one of the various databases that powers the Social Graph. Facebook produced each Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
(MySQL)	is a grouping of dbtypes that are used for testing.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	[the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is a low-latency, high-availability, key-value storage system for user data.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	Provide human readable understanding of user interests that are used to improve personalization in various user facing products.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—In the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readly be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,
	is a tax application used for tax calculation for all FB products (Digital, Ads, Services and Hardware) globally.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiff's request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could be identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—
	is a highly-distributed, highly scalable storage solution built to replace the large use cases of HDFS within Facebook.	purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and the data system is a similar effort that would be disproportionate to the needs of this case, as Plaintfifs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to identified within that data,
		As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups tha	The Special Master's Amended Order asks Facebook to determine whether each data system contains data related to a specific Named Plaintiff. The burdens associated with providing that information are not meaningfully different than identifying any specific data relating to a Named Plaintiff within each system, because—as discussed in the Ji and Pope Declarations—
WhatsApp	WhatsApp Messenger is a freeware, cross-platform and end-to-end encrypted instant messaging application for smartphones.	use the data system"—in the course of its prior efforts to inventory its data systems. Facebook  and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	
_	is a publish-subscribe platform. It allows different groups at Facebook to (re-)use a well designed architecture to receive an ordered and reliable stream of data changes, such as changes.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could
	is Facebook's self-service relational database allocation system.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort tha would be disproportionate to the needs of this case, as Plainitfs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to identified within that data,

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	is Facebook's next generation streaming processing service.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	it  (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could t
	a platform which offers wifi as a product,	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unitelligible outside of Facebook.	teretrieves data from a number of data systems, but not all). As a result, in order to determine what the specific properties of user data are contained within each data system and whether an individual user's data could be identified within that data.
	is a reliable, consistent, highly available, scalable key-value storage service.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups tha use the data system—in the course of its prior efforts to inventory its data systems. Facebook  a, and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	It This is one of the various databases that powers the Social Graph, Facebook produced each Named Plaintiff's DYI file, which for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human readable form.
	Generating training data for instagram ML systems	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could t be identified within that data.

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored in the System
	Record and serve IG user engagement history.	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—Including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort his would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	t  (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to
	Embedding indexing system	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and vetting further detail about each system would require a similar effort the would be disproportionate to the needs of this case, as Plaintiffs' request to identify "alf" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could toe identified within that data.
	_ Detect if any feature contains UII and file the privacy-wave tasks for user verification/remediation	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook according to the data system of the course of its prior efforts to inventory its data systems. Facebook according to the data system of the data system	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could toe identified within that data,
Mapillary	Public street-level imagery and map data platform	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups the use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and collecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	t (the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine what types of user data are contained within each data system and whether an individual user's data could to

Data System Name	High-Level Description of Data System	Explanation for Why Additional Information Is Not Readily Available	Explanation for Why Facebook Cannot Determine if the Named Plaintiffs' Data is Stored the System
Process V	VhatsApp user support requests	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and a confecting and vetting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of Facebook.	(the DYI tool retrieves data from a number of data systems, but not all). As a result, in order to determine who types of user data are contained within each data system and whether an individual user's data be identified within that data,
	Code Management system owned by Core Systems,	As discussed in the Declaration of David Pope, Facebook has not previously compiled information responsive to the Special Master's Order—including descriptions of the "most common functions and purposes of the data system" and a comprehensive list of "the business units, divisions, or groups that use the data system"—in the course of its prior efforts to inventory its data systems. Facebook and and collecting and verting further detail about each system would require a similar effort that would be disproportionate to the needs of this case, as Plaintiffs' request to identify "all" user data is not relevant to any pending claims or defenses and the vast majority of such data could not readily be identified by user and/or produced in a format that would be unintelligible outside of seabook,	(the DYI fool retrieves data from a number of data systems, but not all). As a result, in order to determine who types of user data are contained within each data system and whether an individual user's data be identified within that data,

# Exhibit K

## **GIBSON DUNN**

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January 27, 2022

## VIA JAMS ACCESS

#### HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

Re: In re Facebook, Inc. Consumer Privacy User Profile Litigation, 3:18-md-02843

Dear Special Master Garrie:

I write in response to your January 18, 2022 Supplemental Order Re: Facebook's Production of Plaintiff Data, in which you ordered Facebook to provide a "date certain" by which it could: (1) identify "[w]hich systems identified by Mr. Pope... contain discoverable data related" to the eight remaining Named Plaintiffs, Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King, and (2) for those systems, "either produce th[at]... data from the system or articulate, with sufficient detail, the reason for it should not have to produce the Named Plaintiffs data from that system," and your supplemental January 25, 2022 Order.

Below we:

- i. Outline steps Facebook has taken to date to fulfill its discovery obligations with respect to data relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King;
- ii. Address the Special Master's request that Facebook identify which data systems contain discoverable data relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King and provide a narrowed list of the sources that are potentially-relevant to the Special Master's inquiry; and,
- iii. Describes Facebook's proposed next steps.

We respectfully remind the Special Master that discovery must be both relevant and proportional, considering, among other factors, "the importance of the discovery in resolving the issues, and whether the burden or expense of the proposed discovery outweighs its likely benefit." Fed. R. Civ. P. 26(b)(1). Courts have long recognized that the vast expansion of electronically stored information in the digital age has magnified the risk of discovery abuse: "[t]he information explosion of recent decades has greatly increased both the potential cost of wide-ranging discovery and the potential for discovery to be used as an instrument for delay or oppression." Fed. R. Civ. P. 26(b) advisory committee's note to 1993 amendment. Rule 26 was amended in 2015 to emphasize and mandate proportionality in discovery. "No longer is it good enough to hope that the information sought might lead to the discovery of admissible evidence. .

# **GIBSON DUNN**

## Page 2 of 7

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. Instead, a party seeking discovery of relevant, non-privileged information must show, before anything else, that the discovery sought is proportional to the needs of the case." *Gilead Scis.*, *Inc.* v. *Merck & Co, Inc.*, 2016 WL 146574, at \*1 (N.D. Cal. Jan. 13, 2016).

#### A. Facebook's Efforts to Date.

- 1. Facebook has complied with its discovery obligations to produce relevant user data related to the Named Plaintiffs and subsequent requests for information about the systems in which such data may be stored.
- 2. Facebook has produced nearly one million pages of data relating to current and former Named Plaintiffs in this action, including the individual user data relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King that is relevant to their non-stayed claims and does not present an undue burden on Facebook to search for, identify, collect, and produce. Facebook has provided the Special Master examples of the data it has produced for current and former Named Plaintiffs, which in some cases has exceeded 200,000 pages of data for a single Named Plaintiff. Facebook has also produced more than 80 GB of raw data memorializing Facebook's transfer of data to third parties.
- 3. Facebook has developed a significant record demonstrating that the user data relevant to this case has been produced and that searching for additional user data relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King from its data systems would be unduly burdensome and disproportionate to the needs to this case. Specifically, Facebook has:
  - a. Provided sworn testimony that Facebook makes user data available to third parties through application programming interfaces ("APIs") (Anand Decl. ¶ 4);

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#### HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

- b. Provided sworn testimony that APIs available to third parties "pull data exclusively from the Social Graph" (Anand Decl. ¶4);
- c. Identified the primary databases that support the Social Graph (see Ji Decl. ¶ 5);
- d. Provided sworn testimony that the DYI file "represents the most complete and best compilation of data Facebook maintains associated with [a] . . . user," including—but not limited to—data from the Social Graph (Mitchel Decl. ¶ 5);
- e. Provided sworn testimony identifying the burdens of collecting user data beyond that reflected in the DYI file (see Ji Decl. ¶¶ 10-31);
- f. Provided sworn testimony that —other than the DYI tool (Pope Decl. ¶ 10);
- g. Identified the relevant APIs through which third parties could access the categories of user data Plaintiffs have requested, identified the type of user data each API could be called for, and provided lists of the third parties that had access to them (see 4th Rog Responses);
- h. Provided sworn testimony that identifying additional data points about each of the 149 data systems disclosed to the Special Master, including the "types of user data" within each one, would likely take (Pope Decl. ¶ 9); and
- i. Provided a witness for over three hours of testimony to provide further information about the 149 data systems disclosed, which included testimony that even a single one of those data systems could have numerous use cases—and each may need to be investigated individually to answer the Special Master's questions fully.
- 4. Plaintiffs have not made *any* showing that any of the above representations are incorrect or incomplete. While Plaintiffs have argued that they are "entitled to discovery to test Facebook's assertions about what it made accessible to or shared with third parties" (Pls.' Reply ISO MTC Named Plaintiff Data at 3), they have received that, in the form of millions of pages of documents, sworn testimony, the opportunity to take dozens of depositions, and 80 GB of data regarding Facebook's transfer of data to third parties.
- 5. Duplicative data, or additional raw data that Facebook has confirmed is stored in a source not accessible to third parties, will not help Plaintiffs confirm what data was shared with third parties.

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#### HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

- 6. At the Special Master's request, Facebook has gone to great lengths to provide additional information about its data systems—which are some of the most technically advanced and complex systems in the world—through various submissions, declarations, and testimony. Also at the Special Master's request, Facebook provided information about 149 different data systems (regardless of their relevance); it also provided a witness who appeared at a three-hour hearing with the Special Master to assist with the Special Master's assessment of each of those data systems to the best of his ability.
- 7. Even with the benefit of all of this additional information, which goes far beyond the scope of proportional discovery to which they are entitled, Plaintiffs have not identified any specific information that is missing from Facebook's productions or made any showing that Facebook's representations demonstrating why its productions are complete are incorrect.
  - B. The Special Master's Request that Facebook Identify Which Specific Data Systems Contain Discoverable Data Relating to the Eight Remaining Named Plaintiffs.
- 8. The Special Master asked Facebook to identify "[w]hich systems identified by Mr. Pope . . . contain discoverable data related" to the eight remaining Named Plaintiffs, Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King.
  - 9. As Facebook described in detail in the Pope declaration, Facebook

. As

an initial matter, individual data systems may have multiple different use cases, all of which may store and use data differently and need to be investigated separately. 1/14/22 Hr'g Tr. at 87:13-23, 112:2-11. For each individual use case within each system, Facebook would need to assess whether the use case involves storage of individually-identifiable user data, determine whether the data sets used can be readily searched by user, and (if so) conduct a search of those data sets to determine whether data related to individual users exists in each system; assess the nature of the data and whether it is relevant and not duplicative of materials already produced; and determine whether that data can be extracted in a producible form. As the December 10 Ji Declaration made clear, this assessment and search could take for a single data system. As Mr. Pope testified during the January 14 hearing, his team did not investigate what (if any) categories of user data are contained within each of the 149 systems he disclosed—or even whether each data system actually contains user data. 1/14/22 Hr'g Tr. at 8:12-9:8, 127:6-8 ("So the questionnaire will determine whether it may store user data, but not whether it does and what type it is."). As relevant here, Mr. Pope's team investigated only whether each system was technically capable of housing user data writ large and identified 149 such systems. Id.

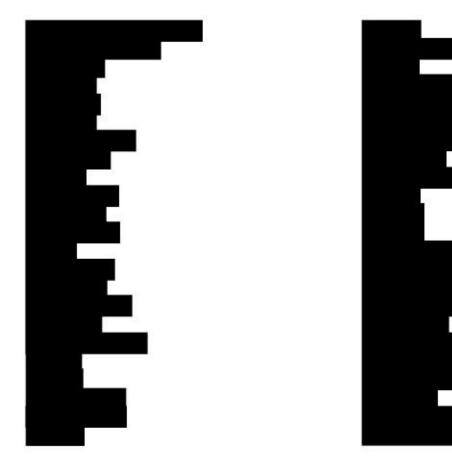
10. Facebook has continued to investigate the 149 data systems identified in the Pope declaration and discussed at the January 14 hearing in order to narrow that list to systems that

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#### HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

could *potentially* be relevant to the Special Master's inquiry. Below, Facebook provides a narrowed (but still over-inclusive) list of 55 systems. This list excludes certain types of systems that Facebook understands are not relevant to the Special Master's inquiry. Specifically, the list excludes:

- internal test systems,
- systems Facebook's teams have declared not to store user data (even though as a technical matter, they are capable of storing such data),
- systems that do not serve the Facebook product and serve only other Meta products (such as WhatsApp),
- systems that do not store unique data, for example serving only as pipelines to transfer data from one system to another (such systems are designed only to move data and data cannot be read from them), and
- other systems from which Graph API cannot call data directly.
- 11. The remaining systems are as follows:



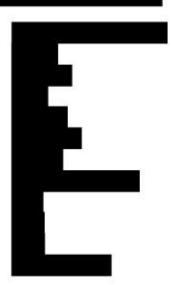




- 12. Even within this narrowed list of 55 systems, certain systems may not For example, a system could store instances of
- 13. Data housed in Facebook's systems can typically be through a complex series of connections within the Social Graph, which is powered by software code drawing on several different data systems and assets. In essence, the Social Graph brings together data from various systems and databases in a way that allows data to be connected so Facebook's product can operate. Accordingly, and unless a system is connected

into the Social Graph, and

14. The following subset of systems are connected to the Social Graph and therefore the data within them typically can be associated to



 $<sup>^{\</sup>rm 1}$  Facebook notes that the DYI files contain IP addresses associated with the users' log-ins.

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#### HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

#### C. Further Response to the Special Master's Inquiries.

- 15. The Special Master asked for a date certain by which Facebook would identify the specific systems that contain data relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King and by which it would either produce the relevant data from those systems or explain why it should not have to do so.
- 16. As Facebook has explained numerous times, Facebook cannot determine with certainty if —leaving aside whether such data could possibly be relevant here and has not already been produced . Facebook's systems are engineered to provide its website and apps to users, not for production in litigation of all data associated with a specific user.
- 17. Facebook has now narrowed the 149 systems it disclosed originally to 12 systems that could be *potentially* relevant to the Special Master's inquiry, so that it is able to provide the Special Master more concrete information about each.
- 18. Facebook suggests that it work with the Special Master to identify three systems from the list of 12 above, and within 14 days, Facebook will provide a detailed analysis with evidentiary support regarding the steps that would be necessary for those particular systems to identify whether they house data Facebook has not already produced relating to Jason Ariciu, Bridgett Burk, Cheryl Senko, Jordan O'Hara, Samuel Armstrong, Steven Akins, Terry Fischer, and Tyler King, and whether it is possible to extract that data in a producible format. Facebook expects that even this narrowed exercise would be an extremely burdensome and disproportionate effort.

As always, we are ready and available to discuss this issue further with the Special Master.

Respectfully submitted,

Debreh L. Sten

cc: Lesley E. Weaver

Derek W. Loeser

# Exhibit L

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     IN RE: FACEBOOK INC.,
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     PROFILE LITIGATION
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               REPORTER'S TRANSCRIPT OF PROCEEDINGS:
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                     JAMS Special Master Hearing
14
                     Thursday, February 17, 2022
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    REPORTED BY:
23
    Katy E. Schmidt
    RPR, RMR, CRR, CSR 13096
24
25
     Job No.: 5096673
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23	JAMS Special Master Hearing on Th	nursday,
24	February 17, 2022, at 1:07 p.m., virtually	before
25	Kathryn E. Schmidt, RPR, RMR, CRR, CSR 1309	96.

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Page 3
1
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	Page 4
1	LOS ANGELES, CALIFORNIA
2	THURSDAY, FEBRUARY 17, 2022
3	000
4	SPECIAL MASTER GARRIE: All right. All right.
5	So we'll go on the record.
6	Okay. This is Special Master Garrie. We have
7	a hearing today to discuss named plaintiff's data.
8	I asked Facebook to provide a series of
9	witnesses to get further clarification as the objective
10	of today is to determine which repositories are
11	appropriate from the initial 149 repositories that were
12	identified by Facebook as potentially having Facebook
13	data, that was subsequently narrowed down to 55
14	potential systems as potentially having may I
15	underline, may have user data in it.
16	The goal of today is to determine what for
17	me to get technical information to figure out what is
18	reasonable for Facebook to look for the named plaintiff
19	data.
20	For purposes of convenience today, named
21	plaintiff data and user data are one in the same.
22	They're not and it's not aggregated. It is user
23	specific data. It is not anonymized data. It is not
24	de-anonymized data. It is their data. It is user data.
25	Okay?

	Page 5
1	So with that sort of definition, I will use
2	them interchangeably, user data and named plaintiffs,
3	but to me they're users.
4	The goal of today is to determine what is
5	reasonable and what where what systems have what
6	data that relates to the named plaintiffs pursuant to
7	the Court's definition.
8	With that in mind, I wanted to read out for
9	really the Facebook engineers that are here. I'm glad
10	you guys are here, because I feel like I can finally
11	just get we can make we can make progress.
12	I just want to read the definition that the
13	judge has defined as what is discoverable user data
14	issue.
15	Okay?
16	Because it's not it's a defined definition
17	and I think it's worth reading for everybody.
18	So the first is "Data collected from a user's
19	on-platform activity."
20	Okay?
21	So it's "Data collected from a user's
22	on-platform activity." That's No. 1.
23	No. 2, "Data obtained from third parties
24	regarding a user's off-platform activities."
25	Now, there's no definition as to what

	Page 6
1	off-platform activities are or anything of the like.
2	So with that in mind, we then have No. 3,
3	"Data inferred from a user's on-or-off platform
4	activity."
5	So if it's obtained from third parties.
6	And then group No. 3 is "Data inferred," which
7	again is not defined but "inferred from a user's
8	on-or-off platform activities."
9	I take all platform activity to be activity
10	that is not being done within the je ne sais quoi of
11	Facebook, whether it's I don't there's lots of
12	assets, so off your platform.
13	Okay?
14	With that in mind, that's the general set of
15	definitions.
16	Okay. So with that in mind, I have a set of
17	questions, and I assume I can start with Mr. Zarashaw.
18	There are two important things you have to
19	remember, and I know both of you have been had the
20	privilege of meeting the lawyers here from both sides.
21	The attorney-client privilege is the only
22	thing that really counts today; right? If there's
23	something that you talked about with your lawyers, say
24	I your lawyers can object, saying it's or you can
25	say "I discussed this with my lawyers," whatever. I

	Page 7
1	think for Facebook it will be Counsel Falconer making
2	or note assisting you as necessary, and it will be
3	well, plaintiffs won't object to attorney-client
4	privilege, so
5	But the goal today isn't to learn anything
6	about anything but systems and data.
7	Okay?
8	I'm not I mean, I appreciate the underlying
9	case and the zealous advocacy, but the truth is what I'm
10	here to do today is to learn and determine about your
11	systems. Like because you've disclosed there are 55 of
12	them that may have plaintiff data, and I think that may
13	be a little excessive to require Facebook to look
14	through all 55 systems for user data, given these
15	definitions.
16	So then with that in mind, I'm going to kick
17	it off
18	Or are there any questions from Facebook?
19	MR. FALCONER: One or maybe two.
20	Is it okay with the Special Master if Mr. Elia
21	and Mr. Zarashaw there is a list of questions that we
22	answered on February 9th that we public information
23	filed into the case.
24	Is it acceptable to the Special Master if the
25	witnesses want to refer back to those written answers

	Page 8
1	during the hearing today?
2	SPECIAL MASTER GARRIE: Yeah.
3	MR. FALCONER: Okay.
4	SPECIAL MASTER GARRIE: Of course.
5	MR. FALCONER: And
6	SPECIAL MASTER GARRIE: Go ahead.
7	MR. FALCONER: And then just for the
8	Special Master's benefit, if this is helpful,
9	Mr. Zarashaw is here specifically with expertise on if
10	there was a API misused topic that the Special Master
11	indicated he was interested in. And that's that's
12	Mr. Zarashaw's kind of area of knowledge and expertise.
13	The other topics that the Special Master had
L <b>4</b>	indicated interest in, Mr. Elia is the person most
15	knowledgeable on those topics, if that helps just if
16	that helps with kind of organization and flow.
17	SPECIAL MASTER GARRIE: It certainly does.
18	I'm just working on my mute and un-mute skills. It
19	certainly does.
20	Yeah. And if either one of the technical
21	witnesses don't feel comfortable answering a question,
22	I get that there are millions of lines of source code.
23	I get there are thousands of engineers. I fully
24	understand that being asked a question on the spot may
25	not regult in an exact anguer

	Page 9
1	The idea is just to move it forward so that I
2	can at least put together tangible understanding of what
3	is appropriate and not appropriate or reasonable and not
4	reasonable in the context of the named plaintiff data.
5	So okay. So API, so I guess Mr oh,
6	sorry.
7	Did plaintiffs have any questions?
8	MS. WEAVER: No. Not at this time. Thank
9	you.
10	SPECIAL MASTER GARRIE: Okay. So,
L1	Mr. Zarashaw, I have some questions about APIs.
12	Before we get into that, I guess my first
13	question is what types of API's interaction took place,
L <b>4</b>	specifically applications interacting with user data
15	versus the bulk API integrations with partners; right?
16	Because there's different ways and there's these bulk
L 7	APIs and then the other way.
18	What types of sort of API interactions sort of
19	played out, or possible?
20	MR. EUGENE ZARASHAW: So I'm not familiar with
21	a distinction between individual versus bulk API.
22	However, there is a distinction between server to server
23	API calls made by a third-party app from their secured
24	servers to our servers versus calls made by an app in
25	the mobile device or in the web browser controlled by a

	Page 10
1	user to our servers on behalf of an app.
2	Is that the distinction?
3	SPECIAL MASTER GARRIE: Yeah. So that
4	yeah. So then that's how they're organized?
5	So because there's been a lot of terms
6	batted around about the bulk API integration from
7	partners, and I didn't fully understand what that meant.
8	So I'm glad that I'm not fully
9	MR. EUGENE ZARASHAW: If I may add to that,
10	the APIs are not quite organized that way. There's
11	overlap in APIs that can be called only from a mobile
12	client, slash, specified only server to server or both,
13	depending and the distinction tends to be in the
14	access token used to access the API rather than API
15	itself.
16	SPECIAL MASTER GARRIE: Okay. Got it.
17	MR. EUGENE ZARASHAW: Would an example help?
18	SPECIAL MASTER GARRIE: Yeah.
19	MR. EUGENE ZARASHAW: So, for example, any
20	time a user is running the Facebook app or a third-party
21	app on a mobile device, the access token on that mobile
22	device inside the app only should have access to data
23	accessible to the user normally, intersected with the
24	data that that app should have access to.
25	So a subset of the two.

That -- which means if there's any data not accessible to the user that owns that access token, then that access token cannot retrieve that data.

So as an example, if you and I are not friends on Facebook and have -- I cannot see your data on Facebook, my access token cannot be used to fetch data about you.

By comparison, there's the concept of an application access token where in a server-to-server call, if you and I have both installed the application and given the application permission to look at our data, that application access token can be used to fetch data about both of us on behalf of just the application.

SPECIAL MASTER GARRIE: So then what if -- is that true for mobile as well then?

MR. EUGENE ZARASHAW: On mobile we only use the first type of access tokens, user access tokens, because it would be unsecure to allow the server side access token out of the control of the app developer's servers.

SPECIAL MASTER GARRIE: Okay. So then does Facebook's APIs, based on social graph and allow third parties to access information on the user's friends through that same system -- well, that is my first question, and then using the system you just described.

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1	MR. EUGENE ZARASHAW: So using the system I
2	just described, there would be two ways to access
3	information about a user's friends. If we're talking
4	about the mobile scenario
5	SPECIAL MASTER GARRIE: Yeah, mobile.
6	MR. EUGENE ZARASHAW: In the mobile then in
7	the mobile scenario, the access token could be used to
8	call an API to get a user's friends who, after the
9	platform 2.0 changes, only return the friends who have
10	also installed the app and granted the app permissions.
11	SPECIAL MASTER GARRIE: Yeah.
12	MR. EUGENE ZARASHAW: So it would return a
13	sub the intersection of the friends the apps has
14	access to, and the friends that the user has access to.
15	SPECIAL MASTER GARRIE: And then in
16	Version 1.0?
17	MR. EUGENE ZARASHAW: It would have returned
18	all of a user's friends if that friend had granted
19	friend permissions.
20	SPECIAL MASTER GARRIE: And that was in the
21	interrogatory's full response so that makes sense.
22	So then so then the Facebook's API is based
23	on the social graph, so then the answer is yes. Okay.
24	So then because one of the things so
25	there's another been a lot of talk of social graph;

	Page 13
1	right? And social graph is a I'll just leave it
2	there. And it allows third parties basically to
3	continue access
4	Does the does Facebook's APIs based on the
5	social graph really allow third parties then to continue
6	accessing friends of friends of friends, like sort of a
7	Russian nesting doll, for lack of a better term?
8	MR. EUGENE ZARASHAW: They did not unless the
9	app had access to those specific friends.
10	So there's always the intersection of what
11	should the app be able to see and what should the user
12	be able to see? The app could only see information
13	about people who had installed the app, or in 1.0, only
14	information about people who are friends with someone
15	who installed the app when acting on behalf of the
16	person that installed the app.
17	So you could not just you could not find
18	data about unrelated people to whom the app should not
19	have access to.
20	SPECIAL MASTER GARRIE: Okay. All right.
21	That makes sense.
22	So then one of the things I want to
23	understand, because there's all this talk of all these
24	different systems, but one thing I'm trying to

understand is could then a third-party application

	Page 14
1	present a user with a user interface that mimics a
2	Facebook log-in page and collect their credentials, and
3	then log into the Facebook application on its own?
4	So I can walk you through what I'm talking
5	about, but I think you get the gist of it. I mean
6	MR. EUGENE ZARASHAW: I think it might help
7	walking through, actually, if you don't mind.
8	SPECIAL MASTER GARRIE: Yeah.
9	So a third-party application, an app developer
LO	builds something, and presents a user with a user
L1	interface that mimmicks Facebook's log-in page.
12	Okay?
13	So they build an app. They think they're
L <b>4</b>	logging in. They collect the credentials.
15	Okay?
۱6	So the app collects the credentials.
L 7	Then the app logs into the Facebook
18	application on its own.
19	Is that is that possible?
20	MR. EUGENE ZARASHAW: So it was technically
21	possible. It was something that we only allowed to
22	specific apps under a contract. It was called the
23	log-in permission.
24	SPECIAL MASTER GARRIE: That's it.
25	MR. EUGENE ZARASHAW: And it would have the

	Page 15
1	app would have to be permitted to exchange a user name
2	and password for a Facebook access to open to log in
3	this way.
4	And only apps who that had their log-in
5	permission were able to do it.
6	This was used in cases where usually due to
7	device constraints, it was impossible to launch a full
8	web browser and log into Facebook, such as an embedded
9	device.
10	SPECIAL MASTER GARRIE: Or a Nokia flip phone
11	or something?
12	MR. EUGENE ZARASHAW: (Nodding.)
13	SPECIAL MASTER GARRIE: So then you said
14	there was an agreement. And then they could log in, but
15	they would have a different level of access the app
16	would have a different level of access because they
17	would be have the user's credentials they're logging
18	in, not the other way; right?
19	MR. EUGENE ZARASHAW: Yes.
20	SPECIAL MASTER GARRIE: Okay. And then today
21	you've sort of stopped that, though. As I understand,
22	it has evolved, your user interface, to prevent to
23	limit that ability today.
24	MR. EUGENE ZARASHAW: May I ask Steven to
25	answer this question, just because I'm a bit out of date

	Page 16
1	on the current state?
2	SPECIAL MASTER GARRIE: Steven, hello again.
3	I hope you had a good evening at least.
4	MR. STEVEN ELIA: Yeah.
5	I'm not sure whether there's currently any of
6	those types of special log-in whitelists that remain.
7	SPECIAL MASTER GARRIE: But there would be a
8	contract or agreement or something there; right?
9	MR. STEVEN ELIA: That's right.
LO	SPECIAL MASTER GARRIE: Okay. That's fine.
L1	Then
12	MS. WEAVER: Special Master Garrie I
13	apologize. But I think it would be helpful for us to
L <b>4</b>	know time frame, and I think you're going there, and I
15	didn't know when to ask.
۱6	But when did the system operate that they just
L 7	described? And maybe you're about to get there and I
18	apologize.
19	SPECIAL MASTER GARRIE: I was literally
20	MS. WEAVER: I've been getting texts so I
21	apologize. Okay.
22	SPECIAL MASTER GARRIE: Here's what I'll do.
23	Plaintiffs could write down all of their
24	questions. When I finish a section, plaintiffs can ask
25	their questions in case I forget anything, but I'm

	Page 17
1	really this is more for me than anybody else.
2	So my question is with regards to the timeline
3	for this what I just described; right? Right?
4	So at some point I know well, if you don't
5	have it, it's completely acceptable; right?
6	Do you know when this feature set what I
7	just described was restricted or removed from the
8	Facebook world, I guess? Platform? Sorry.
9	MR. EUGENE ZARASHAW: I do not.
10	SPECIAL MASTER GARRIE: Steven?
11	MR. STEVEN ELIA: I believe there were still
12	uses of it in 2018. Since then, I'm not sure.
13	SPECIAL MASTER GARRIE: Okay. That's fine.
14	Better "I don't know" is completely an acceptable
15	answer and it's something we can follow up on.
16	My next question is then: Based on the
17	scenario I just described, can a third party log the
18	user into GAE?
19	MR. EUGENE ZARASHAW: I'm sorry. But what is
20	a GAE?
21	SPECIAL MASTER GARRIE: Sorry. It's the graph
22	application you guys have all sorry. It's the
23	graphical
24	MR. STEVEN ELIA: Graph API Explorer?
25	SPECIAL MASTER GARRIE: Yeah. Thank you. The

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1	Graph API Explorer. I wrote all these down. I'm just
2	trying to keep track. There's a lot of APIs you guys
3	have. The Graph API Explorer.
4	Could a third party log the user into the
5	Graph API Explorer? Because that's in the scenario
6	I just described?
7	MR. EUGENE ZARASHAW: Yes. With a user name
8	and password and using Graph API Explorer, they could.
9	SPECIAL MASTER GARRIE: Yeah. They
10	MR. EUGENE ZARASHAW: But their access would
11	still be limited to only things the user would have
12	access to.
13	SPECIAL MASTER GARRIE: Right.
14	But that's different according at least my
15	reading of your API and the libraries, whatever, that's
16	still a different level permission than the third-party
17	app developer would be naturally granted.
18	MR. EUGENE ZARASHAW: It grants access to a
19	number of things that would normally require app review
20	and it would violate our policies if they were to do
21	this, by the way.
22	SPECIAL MASTER GARRIE: No, no
23	MR. EUGENE ZARASHAW: It no way bypasses the
24	controls on what data should a user be able to see.
25	So there there's no app ID under which you

Page 19 1 would be able to get more information with the access 2 token than the user would normally have by just using the Facebook site, which if you had the users use their 3 password, you could also just go to the Facebook site 4 5 without the API at all and get the same data. 6 SPECIAL MASTER GARRIE: But -- exactly. But if you're a third-party 7 app developer, you'd have to go through the -- and I get 8 9 it violates your policies. I'm not saying anything of the sort. 10 But this is way to get a -- that would allow 11 12 an app developer to circumvent the need to get the whole 13 app -- I mean, I've heard a lot of testimony about your 14 app developer policy -- that whole -- I get it is my -it allows them to circumvent it. 15 16 But I just -- so then -- so then I guess 17 from my perspective, did Face- -- so then -- okay. 18 All right. 19 So then the next question I have -- sorry. 20 I'm just moving things around because I thought there 21 would be more witnesses, so let me just... 22 API... 23

I have more API questions but let me -- I have a couple questions about data collection.

So are you the right person for third-party

24

Page 20 1 integration APIs, Mr. Zarashaw? 2 MR. EUGENE ZARASHAW: I think I would have a subset of information. 3 SPECIAL MASTER GARRIE: Okay. Then I'll just 4 5 continue down the path that I have. I'll just --Let me rethink this whole plaintiff question 7 strategy. I think plaintiffs, if you have specific 8 9 questions, I will hear them and then determine whether 10 the witness needs to answer them. 11 So do you have any questions at this point? 12 MS. WEAVER: Just more specificity as to when 13 in 2018. 14 SPECIAL MASTER GARRIE: Oh, that was simple. 15 He did his best to give his answer and we can follow up. 16 So I'm not going to ask. 17 All right. All right. So then activity on 18 data collection, that is something just for Facebook to 19 understand that I do think that should -- clarity should be provided as to when that access -- well, it doesn't 20 21 really relate -- well, I've gotta think about it. Let 22 me just keep going here. 23 Activity and data collection. So -- I 24 believe, and I just want to verify, Facebook collects 25 user activity, like page views, clicks, ad impressions,

	Page 21
1	et cetera; right?
2	Is that right, Mr. Zarashaw?
3	MR. EUGENE ZARASHAW: We collect data of user
4	interaction with our site and app.
5	SPECIAL MASTER GARRIE: And do you collect
6	data like page views?
7	MR. EUGENE ZARASHAW: Yes.
8	SPECIAL MASTER GARRIE: Mouse clicks?
9	MR. EUGENE ZARASHAW: Yes. Depending on
10	which what the clicks are on.
11	SPECIAL MASTER GARRIE: Yeah. So if I click a
12	like, do you capture that?
13	MR. EUGENE ZARASHAW: Exactly. If you click a
14	link, yes. If you click somewhere randomly on the page,
15	I don't believe we capture it.
16	SPECIAL MASTER GARRIE: So then I want to ask
17	about mobile but I feel like that's a whole different
18	animal and I don't know if I want to get to it now or
19	wait.
20	But do you collect data for mobile, like
21	you know, there's all this data that mobile devices
22	have, like your Bluetooth signal, your wifi network. I
23	mean, theoretically, when they log in, as a developer, I
24	recognize that information is accessible.
25	Does Facebook collect that information, like,

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1	you know, nearby wifi access points about the user;
2	right? GPS location, whatever they connect with;
3	right? I mean, do you guys collect that from the mobile
4	side of the house per user?
5	MR. EUGENE ZARASHAW: I don't know what we
6	collect on the mobile side.
7	SPECIAL MASTER GARRIE: Okay. So like time
8	zone, language, cookie data.
9	MR. EUGENE ZARASHAW: I apologize. I've not
LO	spent time on the mobile side of the house so I don't
L1	know what we collect there.
12	SPECIAL MASTER GARRIE: All right. Well,
13	let's talk about on the nonmobile side of the house.
L <b>4</b>	What about like cookie data, like, that are
15	stored on the computer that isn't yours, like cookie IDs
16	and settings?
L 7	MR. EUGENE ZARASHAW: We only get cookies for
18	our own domain sent to us as part of the HTTP requests.
19	So we are not able to collect cookies outside of the
20	Facebook domain or other domains.
21	SPECIAL MASTER GARRIE: Yeah. Like Facebook
22	domains, like Instagram like, it's everything.
23	When you say Facebook domain, you're referring
24	to the Facebook universe; right?
25	MP FUCENE ZAPASHAW: I can confidently say we

1	do not collect data from other domains that we don't
2	have control over. I do not know what exactly we do
3	collect from the domains we do have control over.
4	SPECIAL MASTER GARRIE: Okay. And then like
5	obviously so then one thing that I would want to know
6	from Facebook is if you collect mobile phone numbers,
7	IP addresses, connection speed, and other things tied to
8	the mobile, accessing Facebook through the mobile side
9	by user; right? Not anonymized. Not anything else.
10	For the user; right?
11	And if Mr. Zarashaw or just Eugene and
12	Steven Steven, did you by chance know the answer to
13	my question?
14	MR. STEVEN ELIA: I don't know specific
15	instances. I know at certain points we've had offerings
16	in our app to, for example, import your contacts on your
17	phone to be able to find friends that you're not yet
18	connected to on Facebook.
19	SPECIAL MASTER GARRIE: From the mobile
20	device; right? So when you connect the mobile
21	connectivity, is that associated with the user, and
22	you're obviously granting permission for other things?
23	MR. STEVEN ELIA: I don't know a ton about
24	specifically about how that works. I haven't worked on
25	the mobile side. But I imagine that would read from

your, for example, phone book on your phone.

MR. FALCONER: Mr. Garrie, if it's helpful, we've got some documents that address this question that we could submit for the Special Master, too, if that would be helpful.

SPECIAL MASTER GARRIE: Oh, yeah. That's fine. I don't need it -- if you have the data to answer the question, you can submit it. It's fine. I just -- there were so many documents and so much data that -- I mean, I did read your interrogatories 1, 2, 3, 4 -- I mean, there were a lot of them, and a lot of data, so I may have missed it. So if you could flag it, that would be helpful for me.

So then with that in mind, right, where is the user data that's collected stored? The user activity data that we just talked -- forget mobile. Just focus on what we know. Where is this user activity collected stored?

MR. EUGENE ZARASHAW: It's in a very wide variety of systems. I think the most helpful way to partition it might be to look at data that will at some point in the future expect it to be read again versus data that is being written and likely will not be read any time soon.

So I believe we've referred to it as the

social graph for the entire set of data we store that might also be used by the product again.

And then there are additional types of offline storage where we do things, like logging for every kind of reason, performance, monitoring, stability, just backup, and so on. And a lot of that may end up in other systems that can then be read from production.

SPECIAL MASTER GARRIE: So --

MR. EUGENE ZARASHAW: It could be read by the product.

SPECIAL MASTER GARRIE: Read by the product.

So this is the question; right? There are these 55 systems that have been identified. We can go through each one to figure this out or -- and they've identified a subset of 12. I get that's a social graph. Okay. Great. We can then say that we're down now to 43 systems.

Okay?

There's still 43 systems that may have plaintiff data when the user activity is stored; right? Where is a user -- I mean, it would be good to have with some particularity where the actual user data that is collected by Facebook -- all of it; right?

Because there's a lot of data you collect when someone logs in. They don't -- the computer gives you;

Page 26 1 They don't have an idea what their IP address 2 They have no idea what version of their browser they're using. They have no idea what version of their 3 operating system they're using. 4 5 But I assume you, like every other web-based 6 application or platform, check these things, you know, 7 part for security, part for functionality, part for the user experience; right? 8 9 Someone has a Mac that's four years old and 10 you try to show them some things on the web, it will break the computer, and other --11 12 You know, so you check these things and you 13 store this and associate it with the user. 14 So what I'm interested in is what data you --15 but I get you don't keep all of that. 16 Okay? 17 But let's be clear there's user data, like 18 page use. Okay? 19 20 Let's focus on page use. 21 Where does the data for page use go? Like 22 'cause I assume you track how long they look at it, they 23 scroll, the whole nine yards. 24 MR. EUGENE ZARASHAW: The last I touched this

in around 2015 or 2016, the primary repository for --

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1	provide once and don't read until in bulk or during
2	analysis data would have been in Hive. And there's
3	quite possibly other specific systems it ended up in for
4	data analysis and so on.
5	But Hive was the general repository for
6	analytics data when there was no need for the product to
7	ever read it again.
8	SPECIAL MASTER GARRIE: Got it.
9	And then I'm looking for this letter to
LO	show I'll share my screen in a second to go through
L1	the 50 because but here's the problem: Of the 43
12	remaining systems, only one of them is Hive.
13	MR. EUGENE ZARASHAW: I commiserate with
L <b>4</b>	the
15	SPECIAL MASTER GARRIE: There are 42 other
16	systems that I'm trying to understand may possibly have
L 7	user data.
18	MR. EUGENE ZARASHAW: I commiserate with the
19	problem because looking at the list, I don't recognize a
20	number of those names either.
21	SPECIAL MASTER GARRIE: Well, good. I was
22	worried because I was like searching the data to make
23	that's already been provided to see if it existed.
24	So then
25	MR. EUGENE ZARASHAW: I think the clearest

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1	distinction, if we're looking for understanding what
2	data then left Facebook again is
3	SPECIAL MASTER GARRIE: We'll get to that. I
4	have a whole other set of questions of what left, came
5	back, received, and all of that. I have a whole set of
6	questions about that.
7	So then where does impressions go? Like how
8	many times I reload or load a page? Like, you know,
9	you put I'm sure you track it for ads but also just
LO	impressions; right? Page impressions or ad ad
L1	impressions and page impressions are different; right?
12	They're different units, so to speak?
13	MR. EUGENE ZARASHAW: So you've worked on
L <b>4</b>	systems you've worked on similar systems before where
15	there are task specific storage systems.
16	SPECIAL MASTER GARRIE: Yeah.
L 7	MR. EUGENE ZARASHAW:
24	SPECIAL MASTER GARRIE: So then if a user
25	clicks on an ad, right, and they engage with an actual

Page 29 1 ad unit, you capture that and that ends up in the DIY 2 (sic). 3 Like what I'm trying to understand is users 4 and ad -- like page impressions or whatever, people are 5 getting paid somehow. So like how does the user relationship to, 7 just as an example, the ad -- they view a page and they 8 see an ad. How does that data get stored and captured 9 and associated with the user so you don't show the same 10 user the same ad 20 million times? 11 MR. EUGENE ZARASHAW: I'm not sure that we 12 don't show the same user the same ad more than once. 13 I'm not sure exactly how we store it -- or I 14 should say I'm not sure of all of the ways we store it. 15 But, for example, in case of an ad being shown 16 to a person, 24 And I am not a deep expert so I'm probably 25 missing other systems that it also could get written to.

1	SPECIAL MASTER GARRIE: What I'm trying to
2	figure out is there's two systems, 1 and 2; right?
3	And I'm trying to figure out if you have
4	user data relationship stored for the ad unit about what
5	the user saw or is it duplicative? That's the first
6	question. And then for systems 1 and 2.
7	And then my next very obvious question, is it
8	duplicative of what you already put in elsewhere?
9	Because one of the things that nobody has told
10	me yet is what is duplicative of the DIY file versus
11	what is unique that's not in the DIY file that you can
12	get from the systems?
13	So what I'm trying to figure out is, you know,
14	if data is collected about user activity and it's stored
15	elsewhere besides the Hive, where and those
16	12 systems, where else is the data stored? Like
17	servers, like, I store stuff on planet earth. I mean,
18	it's big.
19	Is there any more like, do you have any
20	idea where that information is actually stored today or
21	was stored? Because these are huge systems; right?
22	is like they paid billions of dollars
23	for it. It is a huge system in itself; right? I mean,
24	there has to be some rhythm to where you're storing this
25	information.

1	MR. EUGENE ZARASHAW: Not all of these systems
2	are that huge.
3	So I think part of the rhythm would be that
4	some of the systems are designed to work with much
5	narrower sets of information, such as not having user
6	cardinality data sizes. And instead, for example,
	being the database where we store ads rather than
8	user data, at least as of last time I touched this
9	back in 2015, 2016, it would not be able to handle the
10	load of storing user specific data. It's too small.
11	But there are other larger systems that can handle user
12	scale data such as Hive.
13	SPECIAL MASTER GARRIE: Yeah.
14	As I understand it, right, DIY has ad
15	impressions, and that means every ad impression is
16	associated somehow to the user, so that means it doesn't
17	exist just in Hive.
18	MR. EUGENE ZARASHAW: I'm not sure how we

MR. EUGENE ZARASHAW: I'm not sure how we produce the DIY file and whether that pulls from Hive or not.

SPECIAL MASTER GARRIE: Okay. Based on what I've heard from Facebook repeatedly -- but fair, good question, one to follow up on, and I will --

Steven, would you know by chance if the DIY file pulls from --

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1	MR. STEVEN ELIA: I don't know that either.
2	SPECIAL MASTER GARRIE: Okay. Any next
3	question is before we go down any other does Facebook
4	have any legacy systems that contain plaintiffs that
5	contain user data today? And I'll give you an example.
6	I used to work in banking for very large
7	banks, like in building their technical systems. There
8	were literally times where my clients would keep systems
9	alive until the users would just die because nobody knew
10	how the systems actually worked. So which is cheaper
11	than trying to move these very wealthy individuals off
12	these systems from a bank they acquired so they just
13	kept them around. They called them legacy systems where
14	people could access the data but not write new data to
15	it.
16	So like does Facebook but I'm being
17	specific, just broader. Does Facebook have any legacy
18	systems that contain user data in it today?
19	Steven or Eugene, can you answer?
20	MR. EUGENE ZARASHAW: I think it might help to
21	have a clear definition of legacy, Mr. Garrie, if that's
22	possible. I don't think I don't know of any systems
23	that would match the example you gave.
24	SPECIAL MASTER GARRIE: Oh, you don't do
25	banking so I assume you have but I mean

1	MR. EUGENE ZARASHAW: But the small number of
2	users read only, don't write to system, and still being
3	left up in production, I'm not familiar with a system
4	quite like that.
5	SPECIAL MASTER GARRIE: Just products that
6	sucked and you killed them; right? I mean, there's a
7	lot of reasons why things may be legacy; right? Like
8	I mean, I think back to, you know, there had been lots
9	of things, you know
10	MR. EUGENE ZARASHAW: I think any point in
11	time there are infrastructure systems we're actively
12	trying to migrate off of.
13	SPECIAL MASTER GARRIE: Yeah.
14	MR. EUGENE ZARASHAW: But that would be in
15	that list. It's usually about the process and they're
16	still used to serve production traffic until they shut
17	down.
18	SPECIAL MASTER GARRIE: Oh. Can you identify
19	from that list which one those systems are? Because
20	that would be very helpful.
21	MR. EUGENE ZARASHAW: I'm a bit out of date on
22	what's currently being deprecated in infrastructure
23	versus what's new and shiny.
24	SPECIAL MASTER GARRIE: Because, like, I mean

I appreciate that you use elastic search but it's --

Page 34 1 that's a very -- people specialize their entire lives 2 just in elastic search so it's worth noting. So then it would be useful to know if Facebook 3 4 has any legacy systems that have user data in them that 5 are accessible through the DIY file. MR. EUGENE ZARASHAW: I do not know the answer 7 to that offhand. SPECIAL MASTER GARRIE: Okay. And what I'm 8 9 thinking about is remember Google Plus? I mean, I do; That was a horrible like -- well, it's all --10 right? 11 Google Plus was a system Google made trying to do social 12 media that failed epically. 13 And I'm willing to reckon that Google Plus --14 Google still has all of the Google Plus data, possibly. Maybe not. But that's an example of what I mean by a 15 16 legacy system; right? 17 So Google doesn't run Google Plus today. But 18 I would -- hypothetically they may still have all of 19 So that's what I'm referring to. Because that data. 20 there's been lots of machinations over the years of 21 different attempts so... 22 MR. FALCONER: If that's not -- if that's not 23 something that Mr. Zarashaw or Mr. Elia can answer 24 confidently, that might be one where it makes sense for

us to go back and make sure we've got the right answer.

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1	SPECIAL MASTER GARRIE: That's fine. I just
2	want to make sure we cover that. That's fine.
3	Mr. Elia, you're not in a position to answer
4	this or are you?
5	MR. STEVEN ELIA: I'm not aware of others
6	either.
7	I will add that as a general matter of policy,
8	we don't retain data beyond the lifetime in which it's,
9	you know, necessary and used.
10	So in these kind of scenarios where there's a
11	product that got shut down and there's no way for a user
12	to access it anymore, the expected behavior is that is
13	not data we're going to keep around.
14	SPECIAL MASTER GARRIE: Yeah. But would you
15	migrate is the data migrated to other systems then?
16	MR. STEVEN ELIA: If that product was, maybe,
17	morphed into another one that would continue being
18	accessible, that's possible. But if it was a product
19	that users would have no way of getting back to, I
20	wouldn't expect that data to be kept in any other form.
21	SPECIAL MASTER GARRIE: All right. So then
22	I'd like to know if there are any of those legacy
23	systems, just to confirm, and if there are, are they
24	identified in the list? If they're not identified in
25	the list, do they have user data? If they do have user

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data, it would be helpful to explain what they do, rather than having to hold a whole nother hearing and back and forth, if possible.

So then I assume Facebook has a set of tools internal for customer sort and other things to track user data.

Are those tools identified in this list?

MR. EUGENE ZARASHAW: I don't know that we have tools to per se track user data.

SPECIAL MASTER GARRIE: You don't, like, have a customer support group that like gets access to -- like take down my page, this isn't fair, they get a different view than -- of the user data than what the user sees?

MR. EUGENE ZARASHAW: We do have operations teams that manage specific queues of work that are task specific and they do get to see data about the user that is relevant to the specific query they're working.

So, for example, if there is -- the example you gave of a page being taken down, then the person working the appeal would have information about the page, some information about the user, the reason for the original decision that caused the page to be taken down and so on.

But it's not really for tracking other data

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1	about the user. It would be the minimum data needed to
2	make a decision on, in this case, whether to grant the
3	appeal.
4	SPECIAL MASTER GARRIE: All right. Makes
5	sense.
6	Are there other sort of systems like that?
7	MR. EUGENE ZARASHAW: There are a number of
8	integrity systems that are similar to this where people
9	losing access to their accounts, us taking down content
10	for a variety of violations of policy, appeals for most
11	of the take-down processes, similar systems for the
12	developer platform, and so on.
13	SPECIAL MASTER GARRIE: And when you're
14	looking at the user data, where is that user data coming
15	from?
16	MR. EUGENE ZARASHAW: Generally from TAO.
17	SPECIAL MASTER GARRIE: Oh, from TAO. Okay.
18	So we'll talk about TAO in a few minutes.
19	But where else does it come from besides
20	because TAO is an interface; right? So, I mean, it's a
21	capability there's a lot you guys have your own
22	have vocabulary here but we'll call it an interface
23	capability, whatever you want to call it.
24	Besides TAO, where else is it getting from?
25	MR. EUGENE ZARASHAW: TAO is a primary storage

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1	system. The majority of day-to-day use data on Facebook
2	lives in TAO as its only storage.
3	TAO is underneath TAO is in itself a pretty
4	complex storage application written on top of thousands
5	of multiple databases but
6	SPECIAL MASTER GARRIE: mySQL implement,
7	right? You just abstracted it out.
8	MR. EUGENE ZARASHAW: Exactly. It's a grab
9	database at the top of MySQL.
LO	SPECIAL MASTER GARRIE: Okay. Now we can
L1	technical terms are better for me than nontechnical.
12	So okay.
13	MR. EUGENE ZARASHAW: With replication and all
L 4	that built handled properly across data centers so
15	multiple things.
16	SPECIAL MASTER GARRIE: Okay. So TAO is
L 7	backed by MySQL. So that's where all the user data is
18	stored.
19	MR. EUGENE ZARASHAW: I may be out of date.
20	I think we may have migrated the backing store for TAO
21	to a different database. I'm out of date on this one.
22	Maybe something faster than MySQL.
23	But, yes, most user data, including data about
24	a page, why we took down the page, the user who is
25	had been on the page, the primary storage for that would

Page 39 1 be TAO. 2 SPECIAL MASTER GARRIE: Okay. So then does Facebook store data about users that is not directly 3 associated with the user or -- I don't know. 4 5 What do you guys call it? What's the key for a user? You called it a token. 6 7 Is that -- are users -- so there's a lot of terms that have been used so can we agree on one? 8 9 Facebook ID? Token? Whatever? The key? 10 MR. EUGENE ZARASHAW: The primary key would be 11 a user ID. 12 SPECIAL MASTER GARRIE: Okay. So then my 13 question is does Facebook store data about users not 14 directly associated with a Facebook ID but is capable 15 of being associated with that user? 16 MR. EUGENE ZARASHAW: I -- probably, in that 17 you -- we store data that is based on IP addresses, and 18 with sufficient work, you could be -- you could make a 19 probable quess between a timestamp and an IP address, what user was using that IP address, not -- not with 20 21 certainty but with probability. 22 SPECIAL MASTER GARRIE: Yeah. I mean, the 23 only thing certain is I hold this pen and I drop it, you 24 know it hits the ground; right? 25 So -- so then I guess address, e-mail, phone

number. Okay. That makes sense.

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So then what is the process that enables data that is not stored in a manner directly -- so what systems -- what's the process or systems where -- that enable data that's not stored in a manner directly associated with the Facebook ID to be associated with it?

Is that like what you're using -- sorry.

MR. EUGENE ZARASHAW: I don't know of any single process because it -- there's a multitude of systems that store data in different ways, some of which don't store it keyed off a user ID, in which case -- if a system is not designed to pull data by user ID, it would take a significant amount of work to potentially modify the system to be able to look it up by user ID.

The analogy -- oh, sorry.

SPECIAL MASTER GARRIE: No. Go ahead.

MR. EUGENE ZARASHAW: The analogy I would use is suppose you have an archive of newspapers that are indexed by the language of the newspaper and the date of that edition, and you want to find out whether my name was mentioned in it.

It would require going through the entirety of the archive quite manually or writing new software to go through the archive to find mentions of my name because

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1	during the original design, it was designed to only look
2	things up by date and language.
3	So we have a number of systems like that where
4	it was just not designed from day one to serve queries
5	of that type.
6	SPECIAL MASTER GARRIE: So then sorry. I'm
7	just thinking about it all. Sorry. I'm listening.
8	So but you have a using your analogy,
9	you have a list of delivered papers with addresses;
10	right?
11	MR. EUGENE ZARASHAW: Often not even
12	addresses. Often something much more rudimentary like
13	some other identifier
14	SPECIAL MASTER GARRIE: You could delivery the
15	paper if it rained that day.
16	But the point is you have a list of delivered
17	papers with some identifier, the address or whatever,
18	and then you connect the paper to a you can connect
19	that paper to a user.
20	MR. EUGENE ZARASHAW: Sometimes. Sometimes we
21	don't even maintain the identifiers. A lot of it ends
22	up being anonymized intentionally or unintentionally
23	because only the necessary data is maintained.
24	So, for example, you might store performance
25	data about a system with no useful identifiers at all.

1	Just how did the system perform during each request with
2	no IP address and no user data, which would make it
3	nearly impossible to tie it back.
4	SPECIAL MASTER GARRIE: Okay. So then if we
5	look at the systems, these 43 other systems, so if
6	you select you select you remove the 12, do you
7	have any idea of what of those 43 would be right? I
8	mean, they all have data. The question is what how
9	is that data being, you know, used or connected to
LO	using your newspaper example, how do we know which ones
L1	of those systems actually can or use to take the list of
12	delivered papers with addresses and connect the papers
13	to a user, as an example?
L <b>4</b>	MR. EUGENE ZARASHAW: It would take a very
15	significant number of engineers a fair bit of time to
۱6	even answer that question, unfortunately. I do not know
L 7	offhand.
18	SPECIAL MASTER GARRIE: But then the engineers
19	for each of those systems, I mean, at some level someone
20	has to know I mean, let me be more tangible.
21	If we look at a system like I mean, I
22	don't know what is. It's literally System No. 6,
23	
24	MR. EUGENE ZARASHAW: I don't either.
25	SPECIAL MASTER GARRIE: Okay. Steven, do you

Page 43 1 know what 2 MR. STEVEN ELIA: I don't, and I don't even recognize the majority of the list. 3 4 SPECIAL MASTER GARRIE: Yeah. 5 Oh. What about -- oh, which is a MySQL 6 database. 7 Is there a user data in \_\_\_\_ -- I assume, taking our newspaper address example, and is 8 No. 38 in the list -- well, I'm saying list. There's a 9 letter provided by Facebook called Facebook Supplemental 10 11 Submission. I could share it. I mean, it -- but 12 there's this list of systems identified. 13 Would you know if the is one of those systems we're talking about? 14 15 Is there any way if you look at this, you and 16 Steven -- I can share my screen -- say which ones would 17 possibly be able to do that newspaper example? MR. STEVEN ELIA: I think it would be 18 19 difficult to say which ones might be, given that Eugene 20 and I don't recognize many of these. 21 example I believe was one of the 22 12 later identified, so that may not be the best example 23 to ask us on. 24 SPECIAL MASTER GARRIE: Oh, yeah. Sorry. tried to highlight them all. 25

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1	What about? It's No. 48.
2	MR. EUGENE ZARASHAW: I have not heard of this
3	one.
4	MR. STEVEN ELIA: Same.
5	SPECIAL MASTER GARRIE: How about
6	; is that one? I mean, that What's
7	
8	Is that one you can connect back?
9	MR. EUGENE ZARASHAW: I don't know of that one
10	either. I mean, I can volunteer an example, if you'd
<b>L1</b>	like, that might be a good one, which is
12	SPECIAL MASTER GARRIE: Yeah.
13	MR. EUGENE ZARASHAW:
L <b>4</b>	SPECIAL MASTER GARRIE: Okay.
15	Didn't think All right. Good.
16	MR. EUGENE ZARASHAW: So I is a search
L 7	back end for searching. And it's a duplication of data
18	stored in other systems. So it enables the using
19	to index another system allows you to create a
20	search application for another system for specific
21	types of queries for another system. So it's generally
22	pointed at things inside TAO, because TAO itself does
23	not serve any kind of searches.
24	So there could possibly depending on what
25	kind of search indexes somebody at one point created, it

1	is possible for there to be user data inside
2	but it would be duplicated in the other systems that
3	is fronting.
4	SPECIAL MASTER GARRIE: Because it's sitting
5	over.
6	So then if they so then if you infer data
7	about the users and it could be connected to people
8	all right. That makes sense.
9	So then what I'm trying to figure out is one
10	of these systems so then you have because then, as
11	I understand it, right I guess maybe the better way
12	to look at it is what systems store the information used
13	to create each Facebook ID?
14	Can we do it that way?
15	Like a user profile?
16	MR. EUGENE ZARASHAW: What do you mean create?
17	SPECIAL MASTER GARRIE: Well, when you create
18	a new user, right, it stores data?
19	MR. EUGENE ZARASHAW:
20	SPECIAL MASTER GARRIE: Where is that on
21	
22	Because so then so then what systems
23	store the data necessary from that list to compile a
24	single user's profile or profile once it's created?
25	MR. EUGENE ZARASHAW: By compile, do you mean

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1	for DIY or for a certain type
2	SPECIAL MASTER GARRIE: Not DIY. I'm talking
3	for Facebook. Because remember the definition the
4	Court so, yes, I wish that was that simple.
5	The Court said data collected from a user's
6	on-platform activity, data obtained from third parties
7	regarding a user's off-platform activities, and data
8	inferred from a user's on-or-off platform activity. So
9	it's much broader than what sits in the DIY file.
10	MR. EUGENE ZARASHAW: I don't have a good
11	answer to that one as to which of these systems may have
12	some of it.
13	The hard part of that question is also knowing
14	which parts are just duplicates of something else.
15	SPECIAL MASTER GARRIE: So if I could get the
16	first question answered, then I want the second part
17	answered.
18	But it's very challenging who at if it's
19	not you or Steven that can answer this, who at Facebook
20	can 'cause it's pretty simple; right? I mean, this
21	question is simple but the answer is deceptively
22	complicated. And I'm just trying to understand at the
23	most basic level from this list what we're looking at.

a single person that exists who could answer that

MR. EUGENE ZARASHAW: I don't believe there's

24

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1	question. It would take a significant team effort to
2	even be able to answer that question.
3	SPECIAL MASTER GARRIE: Okay. There's a
4	Facebook ID and there's an ad impression mapping; right?
5	'Cause we know that because it's in the DIY file; right?
6	It's either in or or
	right?
8	MR. EUGENE ZARASHAW: (Nodding.)
9	SPECIAL MASTER GARRIE: Where is it stored
LO	who knows where these things are being stored?
L1	MR. EUGENE ZARASHAW: Whoever is responsible
12	in the ads team for logging impressions would be the
13	most likely person to know everywhere it would be
L <b>4</b>	logged.
15	SPECIAL MASTER GARRIE: And that would be
16	associated with a user?
L 7	MR. EUGENE ZARASHAW: And which parts of the
18	logging are user associated versus which parts of the
19	logging are only associated with the ad in advertiser
20	but not the user.
21	SPECIAL MASTER GARRIE: Yeah.
22	So
23	MR. EUGENE ZARASHAW: And the challenge is for
24	each product, it would be a different set of people that
25	would know how that specific product area does logging

and	data	rete	ntion.
	and	and data	and data reter

SPECIAL MASTER GARRIE: Because I see these systems that have ad in it but nobody seems to be able to tell me if it's user data in the ad system.

And I know that you can infer and make relationships about the user ad data that's -- because you have it in your DIY file, but there's obviously more data that gets attached to the user's activity to the ad unit that's sitting somewhere in these systems. And I'd really like to not make Facebook go and figure it out for every single system. But the Court says on-platform or off-platform activity, so associated with a user.

So -- but I hear you.

All right. Steven, do you have any idea?

MR. STEVEN ELIA: As I said before, I also

don't even recognize some of these. I would also agree
there's not a single individual who would recognize all

of these or be familiar enough with all of these.

SPECIAL MASTER GARRIE: But there are -- there would be a group of individuals that could access -- someone at some level -- because the ad unit is a great example; right?

Facebook ID to ad impression maps; right?

It's either in the Hive and extracted in a periodic

fashion and stored elsewhere because that's how it ends up in the DIY file.

Whatever system it's extracting it from would theoretically have a richer dataset about the ad user engagement, or maybe not, but someone needs to clarify of your list of systems yes or no.

MR. STEVEN ELIA: What I would say is each of these 55 systems will have a team of engineers who are responsible and knowledgeable about it, but even then, those individuals may not know all of the ways in which that system is used by other teams.

SPECIAL MASTER GARRIE: I get that.

But I'm looking at it from the -- yes. I agree. But I'm looking at it in the narrow definition of how the Court has defined user data as to what needs to be pulled for these users.

And the Court has made a very explicit determination, Judge Corley and Judge Chhabria affirmed -- I don't know who did. But Judge Corley clearly said these three things; right?

And so there has to be some way to -- like I have no problem with an -- like if it's too hard or too complicated, you could articulate them. But what it can't be is it requires a group of engineers to tell me whether or not the ad unit and the ad impression mapping

Page 50 part of it, you know, because it's going take a long 1 2 time and cost a lot of money. Like I appreciate all that but there needs to be tangible pieces of it. 3 4 But if you don't know the answer, that's a 5 legal argument which has no business here. This is just more just I want to get as many technical questions 7 cleared up. And I can bring my legal questions up with the parties downstream and not waste your time. 8 9 MR. FALCONER: I think what -- sorry. I don't 10 mean to cut you off. But for Mr. Garrie, I don't think Mr. Zarashaw 11 12 or Mr. Elia works a lot with the ads -- business in the 13 ads platform. 14 So maybe -- could we take that one back, too, 15 of -- to find someone who works in this area a little 16 bit more frequently and directly and see if that might 17 be one where we could get back to you with a better 18 answer from someone who is more familiar with this in 19 their day-to-day work? 20 SPECIAL MASTER GARRIE: Because all I'm trying 21 to do is go through this list and figure out what 22 systems have user data and how they -- and how --23 like -- because I'm pretty certain that Facebook --24 the -- Facebook ID, just based on my understanding of

the DIY file, is pulling data from different systems.

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1	And those systems may have additional data about the
2	user sitting in them. They may or may not be
3	accessible, or may be duplicative or may not be, but
4	there has to be some way of figuring out the
5	information; right?
6	Because IP addresses may sit in this
7	database or ad impressions I don't know about ad
8	impressions but my likes sit in this database, and
9	the DIY file may the application may pull from that.
10	But the database may have other information about my
11	the user.
12	And the Court, just with this definition,
13	intentional or otherwise, is on platform activity, I
14	mean, it's I clicked a like; right? I mean, it is
15	as an example. But we'll keep going.
16	So then does Facebook include information in a
17	user profile that is not posted by the user to Facebook?
18	MR. EUGENE ZARASHAW: What definition should
19	we use for the user profile in this case?
20	SPECIAL MASTER GARRIE: Well, I could tell you
21	how the Court well, interesting you ask because you
22	have patents that define how you create user profiles
23	that I've actually read.
24	But we won't get into the patent piece of it
25	and just

1	How would you define a user profile?
2	A Facebook ID; right? That's a human how about this,
3	a breathing human entity interacting with your system?
4	MR. EUGENE ZARASHAW: But what I mean is what
5	else makes up a user profile?
6	We don't generally when we look at user
7	profile internally, that term generally means a user,
8	but it's not necessarily a collection of data. So I'm
9	not sure how to answer that question.
10	SPECIAL MASTER GARRIE: So the user is a I
11	mean, the user, I guess you want to call it an object.
12	I mean, calling it I mean, the user is you have a
13	whole social graph schema. Like, I mean, you clearly
14	there's a user I'm not as familiar as you're as
15	you guys are of your system, but we'll call the user an
16	object that interacts with a whole litany of services
17	and systems.
18	Some data, right, like some is
19	system-collected data, like the mobile activity, where
20	they were when they logged in, their OS, whatever, or
21	the computer or whatever.
22	But what you I guess the best way to think
23	about it is if you say Facebook include and its user
24	profile that is not posted by the user to Facebook so

the user -- I guess the Facebook profile page, if you

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1	want to we can be maybe that helps let's say
2	Facebook profile page. Let's start with that.
3	MR. EUGENE ZARASHAW: So is the question then
4	is anything rendered on the Facebook profile page for a
5	user that was not put there by the user?
6	If so, yes, in that
7	SPECIAL MASTER GARRIE: Yes.
8	MR. EUGENE ZARASHAW: there would also be
9	activity of other users that involve this user's
LO	activity.
<b>L1</b>	So as an example, if user A tags user B in a
12	photo, that photo may appear on user B's page, even
13	though user B did not post it.
L <b>4</b>	SPECIAL MASTER GARRIE: So then how is so
15	is there a list of what information that is and how it's
16	obtained?
L 7	MR. EUGENE ZARASHAW: The challenge with
18	answering that question is the data is not you can't
19	always go from a user to all data referencing a user.
20	SPECIAL MASTER GARRIE: No. We talked about
21	that. I get that.
22	Let's just say Facebook profile page is how
23	we'll start with.
24	So does Facebook include information in
25	Facebook profile page that is not posted by the user in

	Page 54
1	Facebook? The answer is yes.
2	And then my question is, do you have a list of
3	what information that is?
4	MR. EUGENE ZARASHAW: I do not have a complete
5	list, but some of that would be in and some of that
6	would be in for the case of the user profile.
7	And then I don't recall which system we use
8	these days to store the photos, but if the photo if a
9	user was tagged in a photo, the photo itself would be
10	stored in yet some other database. And then the
11	identifier for the photo stored in that database would
12	be stored with the post inside most likely.
13	And speaking of the earlier challenge, you
14	I don't believe you would be able to go from the photo
15	to the user. Only the other direction or from the
16	photo to the post, but only in the reverse direction.
17	SPECIAL MASTER GARRIE: Okay. That makes
18	sense.
19	So then
20	MR. FALCONER: Mr. Garrie, I don't know if
21	you're about to change topics. We've been going
22	SPECIAL MASTER GARRIE: I am.
23	MR. FALCONER: a bit more than an hour.
24	Would it be okay if we took
25	SPECIAL MASTER GARRIE: Yeah. We can take a

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1	break. Sorry. I get
2	MR. FALCONER: so Mr. Elia and Mr. Zarashaw
3	can stretch their legs, get some water, and use the
4	bathroom.
5	SPECIAL MASTER GARRIE: Yeah. I apologize.
6	Certainly. So literally it's a perfect breaking point.
7	We're yeah. We can take a five-minute break.
8	Plaintiffs, if you want to if you have any
9	questions that you want to ask, I'm happy to hear them
10	when we come back from our five-minute break. We'll go
11	off wait, before we go off the record. Sorry. We'll
12	go I'm sorry.
13	So the plaintiffs, organize your questions
14	during the five-minute break. We'll go off the record
15	for five minutes and we'll resume we're actually
16	right at the breaking point so that's perfect.
17	And then if Facebook I'm sorry. If counsel
18	for Facebook has any follow-up questions that they think
19	should be asked, please feel free to ask you know,
20	spend your five minutes thinking of any of those
21	questions as well. And we'll resume in five minutes.
22	Okay?
23	So now we're going to go off the record.
24	(Break taken in proceedings.)
25	SPECIAL MASTER GARRIE: So plaintiffs, are

there any questions that you want to ask me that you think I should ask or follow up based on what we've discussed so far?

MS. WEAVER: Yes. I think there's one general framing question and then there's a follow-up with some specific questions about identifiers.

The first general framing is trying to find the internal word or jargon that Facebook uses for what externally people refer to as a profile. And to distinguish that from the profile that is on, you know, a person's Facebook page, which is to say:

When Facebook is seeking to provide personalized ads to Facebook's actual customers by drawing off datasets about, say, one of our named plaintiffs, they aren't going to the download your information tool. They are drawing from some different kinds of datasets that is contained within Facebook that is much larger in scope than just what somebody posted.

It includes that inferred data from on and off the web that's in one of the three categories you named.

And so the question is -- that's the framing.

The specific question is: Are there identifiers or

cookies, like the data cookie or a pixel, that can be

used to trace data connected to the named plaintiffs in

realtime today that we could use as an exemplar?

Page 57 1 For example, if we had today the named 2 plaintiff go on, we looked at the data flow and said there's a Facebook data cookie that is associated with 3 4 them, could we go in realtime today and use an 5 identifier like that to pull information that is inferred? Like the -- whatever verticals or segments 7 these named plaintiffs are in. 8 Not the generic ones that are available on the 9 outward-facing Facebook profile, but the internal ones that Facebook uses to personalize targeted ads. 10 SPECIAL MASTER GARRIE: That was a topic of my 11 12 next section, but we can kick it off. 13 Could you reask the question, though --14 Go ahead, Counsel Falconer. Did you have any 15 question? 16 MR. FALCONER: Well, just -- I'm not sure if 17 Mr. Elia is back yet. 18 SPECIAL MASTER GARRIE: Oh, he's not. 19 not --20 So, Carlos, could you find Mr. Elia, or

Steven -- or Mr. Elia and move him back?

MR. FALCONER: I also --

JAMS CONCIERGE CARLOS ESPINOZA: I think he

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anywhere.

21

22

23

24

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1	SPECIAL MASTER GARRIE: That could be a result
2	of me, to be honest.
3	MR. FALCONER: I also am not on video for
4	everyone so I need I apologize. I need to log out
5	and log back in because I can't see anybody's video. So
6	if that's all right, I'll do that as quick as I can.
7	SPECIAL MASTER GARRIE: Okay.
8	MR. SANDEEP SOLANKI: I can try to ping Steven
9	just on our internal chat. So I assume that's okay with
10	everybody, just to see where he is.
11	SPECIAL MASTER GARRIE: Yes. We can go off
12	the record.
13	MS. WEAVER: Special Master Garrie, we know
14	that there's a replacement ID. You know, is that an
15	identifier that can be used to track people? Is it the
16	data cookie? I don't really know. Are there cookie
17	values we could create right now that are connected to a
18	Facebook user ID to use as an exemplar?
19	SPECIAL MASTER GARRIE: So I got the question
20	gist.
21	So it is the next section that I sort of have
22	to cover with them. So I will get to your question as
23	it comes up in a timely manner as we go into this next
24	sort of section.
25	But I have similar so questions there,

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1	so
2	Why don't we give them a minute to
3	MR. SANDEEP SOLANKI: Oh, he said the Zoom
4	disconnected, gives him an error to log back into it.
5	(Pause in proceedings.)
6	SPECIAL MASTER GARRIE: We can go back on the
7	record.
8	And I can ask Mr. Zarashaw my first question
9	in this area and when I'm assuming if his answer is
10	very succinct, we'll go back off the record. If not, we
11	will continue forward. And hopefully Mr. Elia will be
12	back.
13	With that in mind, going back on the record, I
14	have a general question, which is sort of how does
15	Facebook refer to the set of data it has about users
16	inclusive of embedded and inferred data associated with
17	a particular individual?
18	MR. EUGENE ZARASHAW: The only term I could
19	think of is user data.
20	Just to add to that, we don't generally talk
21	about it in terms of in those terms of user and all
22	the data associated with them. Most of our
23	conversations are in the other direction of a product
24	and the things related to making the product specific
25	product work.

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1	SPECIAL MASTER GARRIE: As engineers, when you
2	build something, how do you refer to it?
3	MR. EUGENE ZARASHAW: Honestly, data.
4	SPECIAL MASTER GARRIE: Yeah. But I'm a
5	unique piece of data. You call me a user object.
6	How do you there has to be some mechanism
7	for when you're developing things to refer to the data
8	about a user.
9	MR. EUGENE ZARASHAW: So we generally refer to
10	them as users or as people, and a user ID is the primary
11	identifier for a user.
12	I think the challenge is in the direction of
13	the connections between the data. A lot of in my
14	experience outside of Facebook, a lot of the time it
15	things would start with a user and fan out from the
16	user. So you could start with a user a simple
17	product and find all the data about them.
18	Because we have centralized infrastructure for
19	certain things, and then many products and surfaces
20	built that both share some of the same infrastructure,
21	it tends to be the other direction around where you have
22	additional data in various systems that reference a
23	user, but it's unless you know what you're looking
24	for
25	As an example, it's much easier if you have a

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1	post to go find the user that made the post than if you
2	have a user to find all of the posts they made.
3	SPECIAL MASTER GARRIE: Like a phone number or
4	something key to the user?
5	MR. EUGENE ZARASHAW: The key is the user ID.
6	It's a 64-bit integer that is the unique identifier for
7	the user that is used for most systems inside Facebook
8	that are not anonymized.
9	SPECIAL MASTER GARRIE: That's more than all
LO	the people in the world so I'm pretty sure you don't run
L1	out of numbers.
12	MR. EUGENE ZARASHAW: Funny topic, we actually
13	are.
L <b>4</b>	SPECIAL MASTER GARRIE: Really?
15	MR. EUGENE ZARASHAW: Because we share that
۱6	64-bit ID space with other objects as well, due to some
L 7	poor infrastructure choices a long time ago.
18	So we're running out of 64-bit numbers.
19	SPECIAL MASTER GARRIE: Got it.
20	So then the 64-bit numbers, every user that
21	trace through okay.
22	MR. EUGENE ZARASHAW: But there are systems
23	that don't care about the user in question, so the user
24	ID can get dropped often as the data traverses through
25	systems.

Page 62 1 Okay. SPECIAL MASTER GARRIE: MR. EUGENE ZARASHAW: Basically the general 2 privacy take on this is if we don't need to log PII, we 3 4 don't. 5 SPECIAL MASTER GARRIE: No. I get that. But how then -- there has to be some mechanism 6 7 that I could use to search these different systems to -because I'm at a -- like, the Court's definition, right, 8 9 unfortunately says "Data collected from a user's 10 on-platform activity," right, which could -- and the 11 second is "Data obtained from third parties regarding a 12 user's off-platform activities," which we're about to 13 get to, and third is "Data inferred from a user's 14 on-or-off platform activities." So the issue then becomes all of these 15 systems, there has to be some -- a mechanism that will 16 17 allow me to trace the data that is associated with that 18 64 bit key. 19 MR. EUGENE ZARASHAW: I think that's the 20 challenge we're facing right now is that is not a use --21 most of these systems exist because the generalized 22 systems weren't sufficient usually for performance 23 reasons. 24 So the reason you're seeing 55 systems on that 25 list is because we started out with two or three, and

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for various reasons, as we built certain products, the performance or cost characteristics of the generalized systems just didn't work for those use cases.

And so we ended up adding specific systems to serve just one use case.

One example, would be storage of large blobs of data, i.e., photos or videos, is highly specialized and only does one thing. It does it far better than our other methods of storage but it only does that one thing.

The use case you're mentioning of I would like to look up all of a thing about a user from the system just was not in this original specification, and it would have to be built.

So I actually think the photo system is a great example because it would be a rather nontrivial effort if you went into that system and tried to find old photos for a user.

You would have to go to a completely different system, find how the photos are tracked about a user, get the entire list of photo identifiers, then go back to the system and look up each photo.

Just because we never originally built the capability to go and find all photos by a user key. In fact, I'm not certain a user key exists in that system

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1	at all.
2	I think most of the challenges we're going to
3	see is because of these highly specialized systems where
4	it was a implementation cost and operational cost
5	decision to only build for the specific use case they
6	are good at and nothing else.
7	SPECIAL MASTER GARRIE: Then, Steven, I'm
8	going to ask you the same question.
9	MR. STEVEN ELIA: Sorry. I had technical
10	issues. Could you repeat the
11	SPECIAL MASTER GARRIE: I'll reask the
12	question. Yes, of course.
13	So how does Facebook refer to the set of data
14	it has about users, inclusive of embedded and inferred
15	data associated with the individual user? Like a
16	Facebook profile; right? I mean, how does Facebook
17	refer to it?
18	MR. STEVEN ELIA: I would refer to a profile,
19	a profile data in a few ways myself, and that's probably
20	in a much more narrow fashion than I think the Court had
21	defined here.
22	Often when I'm thinking about a profile, I
23	think of the data directly on that user object in TAO
24	and other data like their content that is associated
25	with that, usually in that same system.

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1	SPECIAL MASTER GARRIE: Then what about the
2	inferred data that you get associated with that user ID?
3	MR. STEVEN ELIA: Do you have an example you
4	have in mind of inferred data?
5	SPECIAL MASTER GARRIE: I mean, you collect
6	on there's a litany of data; gender, age. I mean, we
7	can I can give a very I guess maybe the newspaper
8	example, you know, where we have a list of the delivered
9	papers with addresses, and I can connect that paper to
10	that user. And then from there, I could you know, or
11	ad impressions; right? You know
12	We could use the newspaper. Maybe that's a
13	good place to start.
14	MR. STEVEN ELIA: As Eugene was saying, I
15	think I only caught part of his answer there before I
16	reconnected when we don't store the user ID with some
17	of this data, it's generally very difficult to look that
18	up by user or associate with the user because that is
19	not indexed in that fashion.
20	And so when I, again, think of this kind of
21	user data, I would think of, well, what is the data
22	that's primarily indexed by that user ID?
23	SPECIAL MASTER GARRIE: You have 55 systems.
24	MR. STEVEN ELIA: Many of which I wouldn't
25	expect to contain user IDs at all or even if they did,

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1	certainly not be indexed by that.
2	SPECIAL MASTER GARRIE: Well go ahead.
3	MR. STEVEN ELIA: Yeah. And so connecting any
4	data in there back to a particular user would be
5	difficult or impossible in most cases, if that's not how
6	it's stored.
7	SPECIAL MASTER GARRIE: But a system that
8	takes a user ID, right, and then returns data that
9	matches to the user somehow is based on characteristics.
10	MR. STEVEN ELIA: A system that takes in a
11	user ID and indexes the data that way, those systems do
12	exist, but most of the ones in that list of 55, I don't
13	believe operate in that kind of fashion.
14	SPECIAL MASTER GARRIE: Can you identify which
15	ones you know of on that list that operate in that
16	fashion?
17	MR. STEVEN ELIA: The primary system that
18	operates that way is and that's the system the
19	only one I can think of that I've personally used that
20	operates in that fashion.
21	MR. EUGENE ZARASHAW: The other one I can
22	think of would be
23	SPECIAL MASTER GARRIE: MySQL doesn't work
24	with the user ID key?
25	MR. EUGENE ZARASHAW: Depends how the keys are

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1	set up. is a layer on top of it that does its own
2	keys.
3	SPECIAL MASTER GARRIE: That's' a question I
4	had.
5	Why is MySQL in there?
6	MR. EUGENE ZARASHAW: We still have some MySQL
7	servers that are not back in They are just used
8	directly. They are also generally not used to use store
9	user scale data.
10	SPECIAL MASTER GARRIE: Does use a
11	like some of these I would think have some user ID, like
12	or or or
13	MR. EUGENE ZARASHAW: There are some
14	databases, Clusters such as that are
15	clusters of MySQL that are not based in
16	I think one thing that may help, given you
17	worked in banking tech, is
20	SPECIAL MASTER GARRIE: I lost connectivity
21	here.
22	How is that possible?
23	Is this the internet? Oh, you gotta be
24	kidding me.
25	Can you hear me, Kathryn?

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1	THE COURT REPORTER: I can hear you, yes.
2	SPECIAL MASTER GARRIE: Okay. It skipped out.
3	Can you send me the link for the realtime
4	transcript so I can read it as well?
5	THE COURT REPORTER: Sure. Can I have your
6	e-mail?
7	SPECIAL MASTER GARRIE: Yeah. D I'll put
8	it in chat for you.
9	So what are those clusters, not the ones,
10	I guess then?
11	MR. EUGENE ZARASHAW: in some cases
12	because
	So I think you dropped
14	out during uh-oh.
15	You dropped out during the last answer. But I
16	mentioned for example, as per your banking
17	days, you had you had databases that had transaction
18	support.
19	
22	SPECIAL MASTER GARRIE: I mean, I guess
23	plaintiff's question so you're saying there's no
24	unifying user ID or key that goes across all these
25	systems?

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1	MR. EUGENE ZARASHAW: Across all of them, no.
2	The most common way to represent a user is a
3	user ID. However, the user ID may not be associated
4	with a lot of the data stored in many IT systems.
5	SPECIAL MASTER GARRIE: Okay. All right.
6	We'll return to this once I've processed it a little
7	further.
8	Off platform so my next question is: Does
9	Facebook and I don't know if this is for Mr. Elia or
10	you Mr. Zarashaw but does Facebook receive data about
11	user's off-platform activity?
12	MR. EUGENE ZARASHAW: We receive some data
13	that I know of due to us having the like button, and the
14	Facebook Javascript SDK. So some data does come in
15	about the source of where this was loaded up or somebody
16	liking a page off of Facebook and so on.
17	SPECIAL MASTER GARRIE: I took a look at the
18	SDK. It's a little broader than that for your inbound.
19	Do you have a list of data you do receive
20	about users and then so I can be specific. User
21	tracking cookies?
22	MR. EUGENE ZARASHAW: I do not know the
23	details of the ad side of the SDK. The last time I
24	interacted with the SDK would have been about 2013,

25

maybe 2014.

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SPECIAL MASTER GARRIE: Got it.
What about you, Steven? I can list them off
if you guys if either one of you know the answers.
User tracking cookies?
Mr. Elia?
MR. STEVEN ELIA: I don't know. I'm not
familiar with the use of cookies. No.
SPECIAL MASTER GARRIE: All right. What about
Facebook pixel?
MR. STEVEN ELIA: I believe that's for ads
purposes, which I haven't worked on either.
SPECIAL MASTER GARRIE: Mr. Zarashaw?
MR. EUGENE ZARASHAW: Same issue. I'm very
loosely familiar with the pixel and not the SDK details.
SPECIAL MASTER GARRIE: Is it possible that
the Facebook pixel, plus the user ID would give us a
decent idea of what systems have what user ID data?
Sorry.
MR. EUGENE ZARASHAW: I mean, it still
wouldn't help us retrieve the data or find it in the

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SPECIAL MASTER GARRIE: Do you guys have a data diagram to explain the flows?

MR. EUGENE ZARASHAW: I don't know of one. I think this would be a data that would need to create or find data diagrams for every flow type or every product type because --

SPECIAL MASTER GARRIE: I don't mean every flow type so let me be specific.

I would just -- what about just basic one?

Like where I'm struggling, right, is there's a ton of systems and I need to understand if they are -- if it is too complicated or as intertwined or as cumbersome as it sounds, there has to be some data diagrams that will explain or articulate how this user data flows.

I mean, because, like -- because you have

DS share and -- I mean, you know, I could give you an

example, like what websites a user visits? Like is that

tracked?

MR. EUGENE ZARASHAW: I don't know offhand.

I know that underlying data would arrive at Facebook servers just because of the browser always sending the HTTP refer header any time.

But I don't know if we actually report it

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1	anymore.
2	I'm not sure if the HP refer header at this
3	point is kept or dropped.
4	SPECIAL MASTER GARRIE: Mr. Elia, do you know?
5	MR. STEVEN ELIA: I also don't know. I did
6	briefly work on the social plug-ins, things like the
7	like button that you
8	SPECIAL MASTER GARRIE: That's literally my
9	next question.
10	MR. STEVEN ELIA: But during my time working
11	on that, which was 2018 and 2019, I don't recall ever
12	seeing that data get processed and used
13	SPECIAL MASTER GARRIE: So my
14	MR. STEVEN ELIA: or stored.
15	SPECIAL MASTER GARRIE: So here's my does
16	Facebook receive data about user off-platform activity
17	via share or their like plug-in?
18	MR. STEVEN ELIA: As Eugene said, it's
19	certainly received. It's sent just as an ordinary part
20	of browser behavior. But whether that results in any
21	sort of logging or writing to any data source, I'm not
22	aware of any, just from seeing that plug-in.
23	SPECIAL MASTER GARRIE: Do you have a data
24	there has to be some or takes custody of, may be a
25	better way is we use the word take custody of the data.

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1	Does Facebook take custody of the data when it
2	comes inbound?
3	MR. EUGENE ZARASHAW: I don't really know what
4	that term means.
5	SPECIAL MASTER GARRIE: So I maybe try it
6	differently.
7	Is there a data diagram that would explain to
8	me how Facebook handles share and like plug-in activity?
9	So I'm on another website. I click something
10	or a like or a share.
11	Does Facebook take custody or receive or
12	whatever that data, how like a data diagram
13	explaining how the user of that data flows and through
14	what systems?
15	MR. EUGENE ZARASHAW: I don't know of one.
16	Russ, do you happen to know is there one we
17	already produced for this or one that exists?
18	MR. FALCONER: I'm also not aware of one off
19	the top of my head. And I don't want to speak off the
20	cuff about that, but that's something we can check. But
21	nothing comes to mind right now.
22	SPECIAL MASTER GARRIE: Yeah. I mean, so I
23	get the save part, but I know the C part is definitely
24	inbound data off the header; right? So you saw it.
25	So the question is: Is that associated with

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1	the user? And then maybe that's the ad. I don't
2	I'm just trying to figure out 'cause you're getting
3	that data, right, from a user's off-platform activity.
4	It's coming inbound. You're capturing it.
5	What about I guess about what via partner,
6	the API? So I'm a partner. I make Facebook an API and
7	share the data back inbound about users.
8	MR. EUGENE ZARASHAW: So we do have an API for
9	uploading graph activities via the SDK.
10	SPECIAL MASTER GARRIE: But what about via
11	partner making? So a partner like an Amazon or
12	somebody, or a Netflix makes an API available to you?
13	MR. EUGENE ZARASHAW: The only API like that
14	I know of as that I'm recalling is the push
15	notification API, the Android and iOS push
16	notifications.
17	SPECIAL MASTER GARRIE: What about you,
18	Mr. Elia?
19	MR. STEVEN ELIA: There is a similar kind of
20	push functionality, for instance, in a platform product
21	we have called WebHooks. The contents of those push
22	updates are defined by Facebook. The developer would
23	configure both, which types of events they want to be
24	notified about, and a URL on their server to receive
25	those.

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1	SPECIAL MASTER GARRIE: So then the WebHooks
2	is like a published subscribed standard; right?
3	So my question is I guess the way I think
4	about it is does Facebook receive data about users'
5	off-platform activity via a partner making an API
6	available to Facebook?
7	So I'm Amazon. I make an API available that
8	Facebook could call attached to the user because there's
9	a whole lot of conversation about reciprocity.
10	MR. EUGENE ZARASHAW: I don't know of any such
11	API.
12	MR. STEVEN ELIA: Same. I'm not aware of any.
13	SPECIAL MASTER GARRIE: So then what about
14	partners bulk uploading data to Facebook? Not use
15	I'm not saying user specific. I'm just saying partners
16	of bulk uploading the data into Facebook? Batch jobs.
17	MR. EUGENE ZARASHAW: So the only thing that
18	would remotely be like that is some of the work on the
19	ad side, but I'm not familiar with the details.
20	SPECIAL MASTER GARRIE: Okay. So then all the
21	off-platform activity goes to pixel share or like
22	basically, it sounds like.
23	Is there any other way that it's tracked, the
24	off-platform activity?
25	MR. EUGENE ZARASHAW: It's possible for a

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1	an off a third party to upload a custom audience of
2	identifiers for their own ad targeting, using our API or
3	our website upload functionality to upload a list of
4	either anonymized or non-anonymized identifiers to us,
5	and then use that list to target their ads without
6	knowing anything about the content of that list.
7	SPECIAL MASTER GARRIE: And you're hashing
8	them like so do they know who you're serving ads to?
9	MR. EUGENE ZARASHAW: There are multiple ways
10	to there are multiple types of identifiers that can
11	be used. And I'm quite out of date in this. I was
12	never particularly deep. But we had functionality to
13	upload user IDs, and at one point we had functionality
14	to target by e-mail addresses.
15	I'm not sure what other form types of
16	targeting there were where a partner would just upload
17	the set or there was also functionality for hash sets
18	where we wouldn't even know the e-mail addresses that
19	they're targeting directly, unless they were also
20	interfaced with users, and then they could just use
21	that custom audience to run their campaign against.
22	SPECIAL MASTER GARRIE: I know a couple other
23	companies do that.
24	What about you Mr Elia?

MR. STEVEN ELIA: I'm not aware of any others.

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SPECIAL MASTER GARRIE: How hard would it be for Facebook to take the UID and the pixel ad user or unit and associate -- and figure out what systems they actually have of the remaining systems or remaining 43 systems?

MR. EUGENE ZARASHAW: It would take multiple teams on the ad side to track down exactly the -- where the data flows. I would be surprised if there's even a single person that can answer that narrow question conclusively.

I think part of the challenge we're running into is we tend to build pieces of infrastructure that are generic and to -- whenever possible. And then just leave them running for anybody at the company to use.

And sometimes piece of infrastructure end up using other pieces of infrastructure as underlying storage and ends up being as a layer on it. But they're not necessarily built with a clear set of only use cases.

So it's very difficult to let's say start with a system and find out all of the users of that system.

On the other -- it's somewhat simpler to start with specific use cases you have and find all the engineers involved in implementing that use case, and from that find out all the systems that might end up

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1	being used tracing through when you use a system to
2	understand what other systems that system in turn uses.
3	SPECIAL MASTER GARRIE: I read your patents
4	and there's definitely inferences about users, like
5	their personality traits.
6	Where does that information go then?
7	MR. EUGENE ZARASHAW: For that one we would
8	need someone from the ads team, probably from the ads
9	targeting team.
10	SPECIAL MASTER GARRIE: Because, I mean,
11	there's patents to predict all sorts of things about
12	people that I assume are implemented somehow.
13	So if you're able to infer someone's rate of
14	being married or not, which is in one of your patents,
15	or anything you know, something of the like, that
16	data is being inferred because I can't imagine users
17	telling you "I think we're going to get divorced."
18	So there has to be somewhere at some level
19	that data has to be aggregated out and inferred from the
20	user activity, and then stored somewhere.
21	MR. EUGENE ZARASHAW: I just don't know
22	offhand where we stored with it would take tracking
23	down multiple people in the ads team to find out all of
24	the systems that might store this.

SPECIAL MASTER GARRIE: I'm in the unfortunate

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1	situation where the Court has made it very clear that
2	the information relating to a user when we say user
3	name, plaintiffs is needs to be determined.
4	So then how does Facebook acquire data about
5	user activity off-platform from third parties like
6	Netflix or Amazon or others?
7	MR. EUGENE ZARASHAW: That's getting beyond my
8	depth, if we do it all.
9	SPECIAL MASTER GARRIE: Mr. Elia?
LO	MR. STEVEN ELIA: To the degree those other
L1	services use things like Facebook log-in, we would
12	certainly know when a user has done so, logged in with
13	their Facebook account, that is.
L <b>4</b>	When a developer like Netflix, for instance,
15	uses the user access token, they get as a result of that
16	log in to make API requests. That is also something we
L 7	would know about
18	But I'm not aware of other instances outside
19	of ordinary use of our APIs by those parties that might
20	be what you have in mind.
21	SPECIAL MASTER GARRIE: Let's talk about just
22	the APIs; right?
23	API. So we yesterday the data let's
24	start with APIs.
25	I'm Netflix. There's an API that's made

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1	available. I mean, is that a we'll get into the
2	private API conversation. But how is that mapped to the
3	user? You said the token? Is that what you said?
4	MR. STEVEN ELIA: An access token is used to
5	authenticate API requests.
6	Towards the beginning of our session today,
7	Eugene talked about two different kinds of tokens. One
8	used on things like mobile devices and web browsers that
9	is specific to the user, and another type of token for
10	server-to-server API requests.
11	And so the result of the user going through
12	that log-in flow
13	THE COURT REPORTER: Sorry. I'm not sure if I
14	missed something. The Zoom froze. So what I heard at
15	the end was "And so the result of the user going through
16	that log-in flow."
17	MR. STEVEN ELIA: The developer gets a user
18	token as a result of going through that log-in flow.
19	SPECIAL MASTER GARRIE: Is that user token the
20	same thing as a user ID?
21	MR. STEVEN ELIA: It's not the same thing.
22	But a user access token is a secure encryption of
23	primarily the user ID and the app ID. So that when that
24	token is provided with an API request, Facebook's APIs

can understand which user and which app is making this

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1	request.
2	SPECIAL MASTER GARRIE: So then how does
3	so then
4	MR. EUGENE ZARASHAW: It's a bearer token that
5	covers both authentication and authorization, and then
6	access control is handled on the app server based on the
7	author's based on the ID that has been verified
8	inside the token. So the sorry.
9	SPECIAL MASTER GARRIE: No. Go ahead.
10	MR. EUGENE ZARASHAW: So the access control is
11	based on the pair of user ID and app ID. The access
12	token the bearer of the access token is authorized to
13	act on behalf of the payer of the intersection of user
14	and app. So the lesser of the privileges of the two.
15	SPECIAL MASTER GARRIE: So then could we use
16	the access token with the user ID to find all the data
17	for third-party apps at least that were accessing data
18	across the face of these systems?
19	MR. EUGENE ZARASHAW: You could use it to
20	query APIs for access to data that a third-party app
21	would have about that user if you knew which exact data
22	you were to query for.
23	So as an example, a complete synthetic
24	example, let's assume an app had access to a photo. A
25	user posted a photo and an app user payer had access to

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1	the photo, you would need to know what photo to pull up
2	or how to navigate through the Graph API to find the
3	list of photos and then find the photo you're looking
4	for.
5	SPECIAL MASTER GARRIE: So then let's return
6	to a specific example for me. Let's talk about Netflix
7	or Amazon. You can pick either one.
8	What data does Facebook get about a user's
9	Netflix Amazon activity, and where does that data end
10	up being stored?
11	MR. EUGENE ZARASHAW: I'm not confident on
12	this one because I have not worked with Amazon, but my
13	understanding is we get absolutely nothing about Amazon.
14	SPECIAL MASTER GARRIE: What about Netflix?
15	MR. EUGENE ZARASHAW: We would get data if
16	they were to use the Javascript SDK about when the
17	Javascript SDK was loaded. It is served over the main
18	difference from Facebook dot com, if I remember
19	correctly
20	Steven, correct me if I'm wrong.
21	so we might not get all the cookies.
22	I don't know if they use the social plug-ins,
23	such as like and share. And we would have to check what
24	they actually send us via the Graph API.
25	SPECIAL MASTER GARRIE: Okay. So then,

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1	Steven, anything Mr. Elia, anything you would like to
2	add to that?
3	MR. STEVEN ELIA: No. My understanding is the
4	same.
5	SPECIAL MASTER GARRIE: So then where does
6	that data get stored? I mean, there has to be I
7	remember the SDK. I just don't know on the back end
8	where it goes.
9	MR. EUGENE ZARASHAW:
<b>L1</b>	SPECIAL MASTER GARRIE: The SDK has
12	function yeah. Keep going. I'm sorry, Mr. Zarashaw.
13	MR. EUGENE ZARASHAW: Logging about the raw
L <b>4</b>	HTTP request by default ends up in Hive.
15	If API calls are made, it would depend which
۱6	API is being called and where the data would get stored
L 7	so
18	SPECIAL MASTER GARRIE: Do we have a data
19	diagram for that? Like you develop someone must have
20	a diagram that says this is where this data is stored.
21	MR. EUGENE ZARASHAW: We have a somewhat
22	strange engineering culture compared to most where we
23	don't generate a lot of artifacts during the engineering

process. Effectively the code is its own design

document often.

24

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1	SPECIAL MASTER GARRIE: So you have to look at
2	the code to figure out I mean, so
3	MR. EUGENE ZARASHAW: For what it's worth,
4	this is terrifying to me when I first joined as well.
5	SPECIAL MASTER GARRIE: You understand,
6	though, like so you're telling me to figure this out,
7	I have to look at the Netflix code to see how they're
8	calling it, and then talk to each engineer in resource
9	to figure out where it's actually storing that data that
10	you're getting? There's no diagram?
11	Because you wrote an SDK so there has to be
12	someone that knows what's supposed to go where at a
13	minimum?
14	MR. EUGENE ZARASHAW: I don't think you'd have
15	to talk to Netflix. It would be more someone would
16	need to analyze what is Netflix actually uploading to
17	us, which would be likely somewhere in
18	Then someone on the team that handles that
19	specific API, because many teams at the company expose
20	different APIs. The API stack itself is another piece
21	of infrastructure that multiple teams contribute to.
22	So we would need to step on, find out what
23	Net API's Netflix is calling that might result in

Net -- API's Netflix is calling that might result in data being exempt.

Step 2 --

24

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1	SPECIAL MASTER GARRIE: So we have at least a
2	high level understanding of that and the time period of
3	that.
4	So where does it go?
5	MR. EUGENE ZARASHAW: So Step 2 would need to
6	find the engineering teams responsible for the specific
7	APIs and ask them to track down where are all of the
8	places the data ends up?
9	And it would depend on exactly what is being
10	up loaded and what the API is for, whether it ends up
11	like if you're looking at we can certainly give you a
12	probabilistic answer. But to get a certain answer would
13	take some digging.
14	SPECIAL MASTER GARRIE: All right. But
15	okay. Probabilistic.
16	What about you, Mr. Elia? I mean, you have
17	engineers on your team and I get the fact that you set
18	them loose on the world. But like there's an SDK for an
19	API. So there's APIs. They have SDK. There's a
20	Javascript SDK. I program it. It comes through to your
21	system. Someone somewhere must know where that data is
22	going to it goes to
23	Then you what happens there? It gets
24	extracted out of and stored into other systems
25	or how does this work?

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MR. STEVEN ELIA: So to use that example, that SDK could call any number of APIs, and our code base is open where any engineer in the company would have the ability to modify that SDK, build a new API for it to call.

And so as Eugene was saying, I think that would require identifying all the APIs, someone like Netflix was calling, finding the teams that are responsible for those APIs.

And last I checked last year there were thousands of APIs and over 500 teams that had built these.

And so the individuals from the teams responsible for those APIs would then be the ones most knowledgeable about --

SPECIAL MASTER GARRIE: I get it.

But we could seduce statistically significantly sample and come up with a relatively probabilistic model that would answer probably for 95 percent of the data that flows through the company. I mean, you're not talking that -- I mean, we don't need to look at a thousand. I could look at 20 of them and aggregate that through to all of them with a 95 percent confidence level at some level.

But what I don't understand is -- so basically

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1	you don't make it to engineer up front is required to
2	make data flow diagrams or data diagrams or anything
3	about what data is going where?
4	MR. EUGENE ZARASHAW: That is the exception of
5	the rule.
6	SPECIAL MASTER GARRIE: True, Mr. Elia?
7	MR. STEVEN ELIA: Yes. That's correct.
8	SPECIAL MASTER GARRIE: So we have 43 systems
9	where engineers of a
10	MR. EUGENE ZARASHAW: For what it's worth, in
11	the design of a lot of these systems, there are diagrams
12	and design artifacts for how the underlying piece of
13	infrastructure is designed.
14	However, it is rare for there to exist
15	artifacts and diagrams on how those systems are then
16	used and what data actually flows through them. They're
17	generally agnostic to the data.
18	MR. STEVEN ELIA: I would add onto that that,
19	yes, often these systems may be built with a particular
20	use case in mind. If other teams find that they have
21	their own use case that would benefit from using that
22	system, they're typically free to make use of it.
23	And so even the teams who maintain and are
24	responsible for these systems may not be aware of all

of the specific use cases that are leveraging.

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1	SPECIAL MASTER GARRIE: Well, with that in
2	mind, then the DIY file is certainly incomplete.
3	Because nobody actually knows what the users are
4	actually doing.
5	I mean I mean, that would be the logical
6	conclusion.
7	All right. Let me ask the next question then.
8	Sorry for thinking out loud there.
9	So then is there aggregated and inferred data
10	that is extracted from the Hive relevant to the users,
11	being the named plaintiffs here, on other named you
12	know, that's my first question, and then I have a
13	follow-up question to that.
14	MR. EUGENE ZARASHAW: What do you mean by
15	relevant in this case?
16	SPECIAL MASTER GARRIE: I mean anything. They
17	have brown cows, red cows, green cows, purple cows. I
18	mean, anything. Like your Hive literally stores
19	everything people do in the entire whole wide existence.
20	So I have no idea what some based on what
21	you told me, some Facebook engineer can write a query
22	and be, like, do these people have brown cows and
23	associated with their user ID because it's related to
24	the cow liking button.
25	I mean, is there so, I mean, any is

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1	there any aggregated or inferred data that's extracted
2	from the Hive relevant to a user?
3	MR. EUGENE ZARASHAW: I don't know. Hive is
4	another similar system where it's relatively free form,
5	how it can be used.
6	So it's back to the starting with the final
7	artifact and trying to trace out how the artifact was
8	created is much easier than starting with the original
9	data and trying to trace all the artifacts that may have
10	been created from it.
11	SPECIAL MASTER GARRIE: So you can't
12	aggregate but can a developer aggregate and extract
13	data out of the Hive that is aggregated or inferred?
14	MR. EUGENE ZARASHAW: They can write queries
15	to assuming they pass the privacy checks, which does
16	require getting certain levels of permission and have a
17	good reason to be doing it, they can create data based
18	on other data in Hive during the data and so on and
19	intermediate tables.
20	But there's no way to find out, for example,
21	what are all of the intermediate tables a user appears
22	in.
23	MR. FALCONER: Could I ask I'm sorry. I
24	just want to make sure I'm following.
25	When you say a developer,

	Page 90
1	Special Master Garrie, do you mean like an internal
2	Facebook developer or like a
3	SPECIAL MASTER GARRIE: Yeah. Only a Facebook
4	engineer. I understand only Facebook engineers have
5	direct access to the Hive.
6	Is that not true?
7	MR. FALCONER: Right. Okay.
8	MR. EUGENE ZARASHAW: That's correct.
9	SPECIAL MASTER GARRIE: Okay.
10	So I've sat through a lot of depos so I just
11	assume certain things, but fair point.
12	So let me give you a more practical example.
13	Can an engineer extract linguistic data from
14	the Hive that has communications between different
15	users, retrieve those data from the user profile; right?
16	So because the messaging is part of the DIY file.
17	So I extract linguistic data from the DIY
18	file, I then retrieve characteristics from the user's
19	profile themselves; right? So we have linguistic and
20	the user profile, and I'm extracting data from both of
21	them.
22	And then I determine, based on the user's
23	linguistic patterns and their profile data, I then store
24	certain personality or characteristics traits of it;
25	right?

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1	I know you guys filed for patents on this.
2	My question is where does that data go?
3	Because then you store the content for the user based
4	on those characteristics that you derive, at least
5	according to the patents.
6	MR. EUGENE ZARASHAW: Since we're on the
7	record, I don't believe that case is possible because to
8	my recollection,
10	SPECIAL MASTER GARRIE: Yeah. Sorry. I
11	forgot. You're right.
12	But you can look so you look at the message
13	and the other so you look at the message and the user
14	profile, Sorry. So remove it from
15	You look at them outside of
16	MR. EUGENE ZARASHAW: So it would depend where
17	that team wanted to store it. There are multiple pieces
18	of infrastructure they could use. They could also build
19	custom infrastructure if they wanted to store something
20	like that.
21	It would entirely depend on the specific team
22	in question, what they chose to use.
23	SPECIAL MASTER GARRIE: So how I do find out
24	which systems actually have this user data that can be
25	inferred?

Page 92 1 MR. EUGENE ZARASHAW: I don't know. 2 SPECIAL MASTER GARRIE: Seems very socialized. MR. EUGENE ZARASHAW: It's a rather difficult 3 4 conundrum. 5 SPECIAL MASTER GARRIE: I mean, I appreciate 6 the equality of access here. It's just -- it seems 7 very -- I'm trying to figure out a way that's more efficient and effective to meet what the Court has 8 9 ordered for the 43 other systems. But it doesn't sound like -- let's keep going. 10 So what other databases housed -- do you 11 12 have -- is there any list anywhere the databases that 13 housed inferred or aggregated data? Is there -- of the 14 systems we have, can you tell me which ones are likely 15 to house it? 16 MR. EUGENE ZARASHAW: I don't know. 17 the only one is my go-to guess. Probabilistically. 18 SPECIAL MASTER GARRIE: And is one of the 19 42 that remain. 20 Like, Mr. Elia, do you have any guesses? 21 MR. STEVEN ELIA: I don't have an indication about some of the others. I probably used half a dozen 22 23 of these myself. 24 SPECIAL MASTER GARRIE: Which ones do you use? 25 Let's focus on those.

Page 93 1 MR. STEVEN ELIA: I'll go through this list. 2 , Memcache, TAO, and MySQL, although I mostly think of that in terms of 3 and 4 5 And those are the ones that I have personal familiarity with. 6 7 SPECIAL MASTER GARRIE: Then could TAO store 8 that information? 9 MR. STEVEN ELIA: Could you repeat --SPECIAL MASTER GARRIE: The inferences? 10 MR. STEVEN ELIA: Could you repeat the full 11 12 context of your question? 13 SPECIAL MASTER GARRIE: Yeah. 14 So I look at the chat message -- so you look at my chat messages with a friend, and then you look at 15 my profiles and you decide that I am -- you make some 16 17 inferences about my personality traits or 18 characteristics or -- and then store that in a database.

MR. STEVEN ELIA: TAO might be an odd choice to use for that. What you could do if you were to store information like that in TAO is create a new kind of object with fields for these different forms of inferences you wanted to keep track of and associate that object, for instance, with the user those are inferences about.

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SPECIAL MASTER GARRIE: But it sounds like
MySQL could be just as well a database if they wanted,
they could do it in?
MR. STEVEN ELIA: It could. That, as Eugene
also mentioned, is typically not used for user data,
just because it wouldn't support it at that scale.
SPECIAL MASTER GARRIE: Okay. So that I
would assume would not be one of those?
MR. STEVEN ELIA: is used to store
things like the photo or video binary files. It's more
of like a blob kind of storage.
I also, like Eugene, don't know if it even has
user IDs. So given something like an identifier of a
photo that's in, I don't know if you could
even find the user who uploaded that photo.
SPECIAL MASTER GARRIE: But it is linked
somehow to the user ID, otherwise you just have a bunch
of photos sitting
MR. STEVEN ELIA:
SPECIAL MASTER GARRIE: So then TAO is sort of
like the database on top of the database, so to speak.

	Page 95
1	I have pictures
2	MR. EUGENE ZARASHAW: It's often used that
3	way.
4	SPECIAL MASTER GARRIE: So then you look at
5	TAO.
6	And then if you then what about
7	what's you mentioned Mem?
8	MR. STEVEN ELIA: Memcache, which is a caching
9	layer, so during a request there might be some
10	information that's repeatedly accessed.
11	SPECIAL MASTER GARRIE: That's the ADD
12	experience. I got it.
13	User satisfaction, eminent or most user
14	experience.
15	MR. STEVEN ELIA: As a let me give a
16	concrete example.
17	So something like your own name might appear
18	multiple times in the course of loading a particular
19	Facebook page like your profile. Rather than query TAO
20	in some underlying database every time that's needed to
21	render, that would be expensive. It's cheaper to use a
22	caching layer like Memcache.
23	SPECIAL MASTER GARRIE: Yeah. That's why they
24	have ram yeah. Same idea, just a software extracted
25	ram. I get it. It's for that user experience. People

	Page 96
1	aren't patient. I get it. And it's expensive. And
2	your data centers and all that.
3	Then you said and what was the other one
4	you mentioned?
5	MR. STEVEN ELIA:
6	SPECIAL MASTER GARRIE:
7	Would they be used to store that?
8	MR. STEVEN ELIA: and to the degree
9	there's differences between them, I'm not familiar with
10	them. I would use those almost synonymously. These are
11	often direct MySQL instances.
12	My own familiarity and use of them has been
13	with the capability system that I described yesterday in
14	my testimony for whitelisting apps for a certain kind of
15	functionality.
16	SPECIAL MASTER GARRIE: Yeah. I thought
17	that's where all that sort of data rests or existed;
18	right?
19	MR. STEVEN ELIA: There's an instance that
20	stores that information. But any team might have their
21	own instance for data specific to their product or
22	system.
23	SPECIAL MASTER GARRIE: There's no way to
24	query the system to find out if there's user data
25	inferences in it, which it sounds like?

Page 97 1 MR. EUGENE ZARASHAW: Not that I know of. 2 MR. STEVEN ELIA: Yeah. I don't think at a technical level it would even be possible to query 3 across all instances. 4 5 SPECIAL MASTER GARRIE: You have to write a script and then type it out and dump it, and then query 6 7 that script. And then go back and look at that dataset. MR. EUGENE ZARASHAW: It's often more painful 8 9 than a script because you're often dealing with hundreds 10 of thousands of instances. So even one failure can cause issues. 11 12 It takes some nontrivial engineer to work 13 through reliably, even touch every single database 14 shard. 15 SPECIAL MASTER GARRIE: Yeah. I mean, again, 16 we could sample it and skip every and just do a sample. 17 Is whitelist, you mean in and out -- an allow list; right? That's what you -- when you say -- the 18 19 whitelist is a capability -- yesterday there was a lot of -- in your prior testimony, there was discussion 20 21 about capabilities and whitelists and that tool set.

That's where that set is; right? In an instance in that database?

MR. STEVEN ELIA: The list of capabilities that have been granted to a particular application and

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the history of that is in an seed as well as -- as of last year, I believe, that information is also duplicated in

SPECIAL MASTER GARRIE: Looks like TAO data is pretty -- it's fairly -- what systems in here on this list of 55 -- or I'll call it 43 -- are TAOs an overlayer for most user data? Do you have any idea?

MR. STEVEN ELIA: I don't know which of these

systems TAO would duplicate info of.

SPECIAL MASTER GARRIE: A primary -- okay.

So what other data -- is it possible then to tell me what other data, other than anonymized data, is in the database or in these systems here?

If I were to say I don't care about anonymized data, I just want to know about non-anonymized data in the systems, is there any way to figure out?

MR. EUGENE ZARASHAW: I don't know of one.
We're back to square one on having to figure out what is actually stored in each database and often task the engineering team that owns that specific data what it actually is.

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1	SPECIAL MASTER GARRIE: Okay.
2	MR. EUGENE ZARASHAW: For what it's worth,
3	there are some systems we could rule out as definitely
4	being duplicate or transient data that is like, for
5	example, Memcache is a good example of only storing
6	things that are, okay, oozing in short order because
7	it's just caching data.
8	Or is another one where it's just an
9	indexing system where the primary data must live
10	somewhere else.
11	Laser is another system where by definition,
12	any data it serves is just fronting an existing Hive
13	table.
14	So there are certain systems that it's very
15	difficult to find out what has user data but it might be
16	possibly to rule out some systems as having data always
17	derived from some other system.
18	SPECIAL MASTER GARRIE: Yeah. That's what it
19	sound it sounds like some of these or they have
20	data that's contained in another system; right?
21	So TAO
22	MR. EUGENE ZARASHAW: There's a lot of
23	duplication because the use cases for the different
24	systems vary more often by the read rather than write

case, since that tends to be the higher volume.

Page 100 1 So there are often systems that exist simply 2 because the system they cover can't handle the read volumes. 3 4 SPECIAL MASTER GARRIE: Do either one of you 5 have any idea what is? MR. EUGENE ZARASHAW: 6 7 MR. STEVEN ELIA: I don't. SPECIAL MASTER GARRIE: It would be good to 8 9 know what the acronyms stand for at a minimum for the 10 systems. Some I know, like -- what about 11 12 MR. EUGENE ZARASHAW: Unfortunately not. 13 MR. STEVEN ELIA: I'm not familiar with it. 14 SPECIAL MASTER GARRIE: What's 15 MR. EUGENE ZARASHAW: Don't know. 16 MR. STEVEN ELIA: I also don't know what it 17 I don't know with confidence what stands for, but that may be which is a common way we 18 19 would abbreviate a system named that. 20 SPECIAL MASTER GARRIE: I think we're at 21 another breaking point. If you want, we can take a 22 break, and then I have -- yes. I do have more 23 questions. And we'll take a five-minute break and then 24 I'll let -- well, if Facebook has any questions, and 25 then plaintiffs have any questions, we'll ask them right

	Page 101
1	after the five-minute break.
2	Hopefully oh, Mr. Espinoza is here so I
3	won't drop anyone this time. And I apologize, Mr. Elia.
4	That is likely me.
5	So we will take a five-minute break. We'll go
6	off the record and then we'll resume.
7	We'll go off the record.
8	(Break taken in proceedings.)
9	SPECIAL MASTER GARRIE: All right to resume
10	for the Facebook side?
11	MS. WEAVER: We do have some questions, if
12	we're allowed.
13	JAMS CONCIERGE CARLOS ESPINOZA: Mr. Falconer,
14	just trying logging off and logging back in again. I'll
15	see if that does the trick to reset your mic.
16	SPECIAL MASTER GARRIE: I think he's we're
17	still off the record so
18	(Pause in proceedings.)
19	SPECIAL MASTER GARRIE: In the interest of
20	keeping everything on track, we're going move this right
21	along here. We're good to go back on the record?
22	THE COURT REPORTER: Ready.
23	SPECIAL MASTER GARRIE: All right. So
24	plaintiffs, what questions would you like to ask?
25	MS. WEAVER: I think we still are interested

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1	in learning what the replacement ID is, its relationship
2	to the Facebook ID. And if Facebook is going to satisfy
3	an individual user's data deletion request, how does it
4	accomplish that? And does it trace the data through
5	some form of IDs or a script or a query?
6	SPECIAL MASTER GARRIE: That's my GDPR line of
7	questioning I have. So the replacement ID, I'm willing
8	to entertain.
9	Is there does Facebook use something called
LO	a replacement ID?
L1	MR. EUGENE ZARASHAW: I don't know what that
12	is.
13	Steven?
L <b>4</b>	MR. STEVEN ELIA: I've heard of an RID, but I
15	don't know if that's the same thing.
۱6	SPECIAL MASTER GARRIE: That answers that. It
L 7	would be good if Facebook could check well, actually
18	before that happens, plaintiffs, can you clarify where
19	did you learn about a replacement ID?
20	MS. WEAVER: It's been referenced in some of
21	the documents produced.
22	I can actually if Chris Springer wants to
23	identify it, I don't know if he knows or not.
24	But we also know that there are other
25	alternative and I guess we think the replacement ID

	Page 103
1	is the RID. So if you can explain the context of what
2	the RID is?
3	We're just trying to trace the identifiers
4	that can be used to identify content that can be linked
5	under the definition of personal information in the
6	State of California that can be reasonably associated
7	with these named plaintiffs.
8	What are the identifiers that we use to do
9	that?
10	MR. DEREK LOESER: To provide slightly more
11	context, there are documents produced that describe the
12	deletion process of de-anonymizing data, and that's
13	related to the same query.
14	SPECIAL MASTER GARRIE: I have a full line of
15	questioning around the GDPR, but or CCPA.
16	I guess we can ask those questions first and
17	then we'll progress forward.
18	For GDPR, or the European Innovation Statute
19	or the California Consumer Privacy Act, they have very
20	stringent requirements around users' right to request
21	information about them to be deleted.
22	How does Facebook actually define a user and
23	delete the data?
24	Before you answer, what I'm specifically
25	interested in is do you have diagrams or any

	Page 104
1	documentation that's set out how that works and
2	operates?
3	MR. EUGENE ZARASHAW: I would have to defer to
4	the deletion and privacy team on this one. It is
5	definitely not my area of expertise.
6	MR. FALCONER: Yeah. That I would suggest
7	here that this is a pretty special team in at the
8	company that works on this and is knowledgeable about
9	this. And obviously we're more than happy to answer
10	these questions, but I want to get the right people to
11	give you the best answers.
12	SPECIAL MASTER GARRIE: That's fine.
13	MR. FALCONER: And so if we could do that, I
14	think that might be more fruitful.
15	SPECIAL MASTER GARRIE: Not a problem.
16	I want to talk to the engineering resources
17	that worked with Mr. Pope on that effort. I believe he
18	was a technical project manager in that effort. And so
19	it would be good to just the engineering resources
20	for how they did it because they surveyed all of these
21	people to make this list.
22	So we'll table that for a follow on, maybe.
23	Okay. RID, can you clarify what's the RID and
24	the chance that is, indeed, the replacement ID?
25	MR. STEVEN ELIA: You're directing that to me?

Page 105 1 SPECIAL MASTER GARRIE: Yeah, Mr. Elia. 2 No lawyer is my question directed at at all. MR. STEVEN ELIA: So I'll give you my limited 3 4 understanding of it. I think this would also be a topic that could be useful to discuss with an engineering team 5 6 responsible for it. 7 But I've seen RIDs described as a way to 8 anonymize data. 9 A common scenario would be to SPECIAL MASTER GARRIE: That's an interesting 23 24 way to -- does that work across all of the system --25 what systems is that RID operationally applied to?

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1	MR. STEVEN ELIA: I'm not sure which systems
2	outside of might store data off of an RID.
3	SPECIAL MASTER GARRIE: All right. So next
4	sort of bucket of things we're going to talk about is
5	third-party integration APIs.
6	I know Facebook required at least
7	documentation I've reviewed, allows third-party
8	applications to access private APIs that are not
9	publicly available.
10	Is that your understanding as well, I guess,
11	Steven or Eugene?
12	MR. STEVEN ELIA: That's right.
13	MR. EUGENE ZARASHAW: Yes.
14	SPECIAL MASTER GARRIE: So now I want to ask
15	very specific technical questions because I've been
16	curious about this.
17	What do the following permissions provide:
18	Friends and anyone?
19	MR. STEVEN ELIA: The friends
20	SPECIAL MASTER GARRIE: Friends underscore of
21	underscore anyone.
22	MR. STEVEN ELIA: Yes. Friends of anyone is a
23	capability that allows an application who would have it
24	to view friendships without the users in question
25	needing to have installed or logged into that

Page 107 1 application. 2 Ordinarily the public behavior of this is that for a friendship to be visible, both users need to have 3 logged into that app and both need to have authorized 4 5 access to their friends list. And so this capability allows doing that even 7 if, say, one of those users had not logged into that application. 8 9 SPECIAL MASTER GARRIE: Okay. And then what 10 about the XMPP underscore log-in underscore grant? 11 MR. STEVEN ELIA: I'm not familiar with that 12 one off the top of my head. 13 MR. EUGENE ZARASHAW: I am. 14 X -- the XMPP protocol is an old chat 15 protocol. And Facebook used to operate a set of chat 16 servers that I believe could integrate with XMPP client 17 a very long time ago. 18 So this permission has to do with the ability 19 to log into the chat servers back when it was chat, 20 before it was even called Messenger, from what I 21 remember. 22 I do not know if anybody still has this. 23 SPECIAL MASTER GARRIE: What about -- but why 24 would you use it? What would you use it for? 25 MR. EUGENE ZARASHAW: I'm now getting a little

	Page 108
1	hazy on my memory, but if I recall, it's to make sure
2	only certain clients could log into the chat servers,
3	the Facebook chat servers.
4	SPECIAL MASTER GARRIE: Okay. What about
5	TLS without dialogue?
6	MR. EUGENE ZARASHAW: Oh, yes. I do remember
7	that one.
8	And, Steven, correct me if I'm wrong on this
9	one.
10	I believe this was for apps which build their
11	own grant permissions dialogue UI, usually embedded apps
12	where they could not display a web browser with our UI
13	on them. So instead we would have a contract where they
14	would specify exactly how they were going render the UI
15	with all the disclaimers we needed.
16	And in exchange, we would let them grant app
17	permissions after log-in without displaying our
18	dialogue.
19	SPECIAL MASTER GARRIE: So there's no user
20	consent obtained from the Facebook side. It was relying
21	on the app provider?
22	MR. EUGENE ZARASHAW: Exactly.
23	And the type of consent, the exact pixels for
24	the consent, would be spelled out in the contract. So
25	that all of the consent would be in the third-party

	Page 109
1	controlled UI, but they would be contractually obligated
2	to still show everything we needed them to show.
3	SPECIAL MASTER GARRIE: I saw that on all
4	your a lot of the telco mobile
5	MR. EUGENE ZARASHAW: Exactly.
6	SPECIAL MASTER GARRIE: Because it comes
7	pre-installed I guess.
8	So then standard friends info, friends of
9	anyone, I didn't get how that was different.
10	MR. STEVEN ELIA: If I recall correctly
<b>L1</b>	it's been a few years since I've looked at these
12	friends-related capabilities it's very similar to
13	the friends of anyone use case.
L <b>4</b>	One of them, I'm not sure which, is restricted
15	to the type of access tokens and requests made from a
۱6	developer's servers as opposed to things like the mobile
L 7	device or web browser.
18	SPECIAL MASTER GARRIE: So then and then
19	what about FQL friend request permission with auto
20	accept link?
21	MR. STEVEN ELIA: Could you repeat the name?
22	SPECIAL MASTER GARRIE: Yeah. FQL underscore
23	friend underscore request underscore permission
24	underscore with underscore auto accept underscore link.
25	MP STEVEN FLIA: I halieve this was a

	Page 110
1	capability which allowed the app to see the friend
2	requests a user has received and information about those
3	friend requests, like who it's from, as well as a link
4	which they could render to the user, and if the user
5	clicks that link, it would accept that friend request.
6	SPECIAL MASTER GARRIE: Okay. I get it.
7	So what about nearby underscore users?
8	MR. STEVEN ELIA: I don't recall off the top
9	of my head what that capability did.
10	MR. EUGENE ZARASHAW: I don't know this one
11	either.
12	SPECIAL MASTER GARRIE: What about Titan
13	underscore API?
14	MR. STEVEN ELIA: That was a capability that
15	was generally used to gain access to messaging-related
16	APIs. So an API that would allow sending a message or
17	reading messages that a user had received, for example.
18	SPECIAL MASTER GARRIE: Now, these APIs could
19	write to which database which of those systems we've
20	been those 55 systems?
21	MR. STEVEN ELIA: The most common that they
22	would write to would be would be Not being familiar
23	with most of these 55, I can't say which others. But at
24	a technical level, any of these that have the ability to

be written to from production traffic are technically

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SPECIAL MASTER GARRIE: So then if we call these -- let's say if we called TOS without dialogue capability, what -- that would write to TAO? Like how does this capability -- like what I'm trying to understand is capabilities -- who defines where the data writes to on a capability?

MR. STEVEN ELIA: A capability is used to gate a section of code. It could be an entire API. It could be a particular field on an API. It could be a particular function called by an API.

And so the capability itself doesn't directly result in any kind of data to be written, but determines whether a given piece of code should execute based on whether the app making the request has that capability.

SPECIAL MASTER GARRIE: So then where does the data for the TOS get written?

MR. EUGENE ZARASHAW: There are two sets of data with that specific capability. One is the --

SPECIAL MASTER GARRIE: Right.

MR. EUGENE ZARASHAW: And the fact that Facebook has granted this specific application ID, this capability, which would be something on the contracts, review process and so on, and that would likely live in

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Steven, correct me if I'm wrong --

MR. STEVEN ELIA: That's right. That's right.

MR. EUGENE ZARASHAW: And might also be



Then the other thing would be where does the data get written that is the result of that -- of an API call being used where the behavior of the API call is different because of a capability?

So for that specific capability --

And, again, Steven, correct me if I'm wrong.

-- the relevant API call would be the grant permissions dialogue or the -- or auth dot log in where when the user logs into the app, because the capability is present, some additional side effects could happen. And those side effects, because it's about the relationship between the user and the app, would likely be

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SPECIAL MASTER GARRIE: Okay. So basically these are all the capabilities that are needed for building apps to do what you guys do today?

23 are

around, yes, building a -- allowing a third party to build all or part of a replacement Facebook client

MR. EUGENE ZARASHAW: Most of the capabilities

25

24

themselves.

	Page 113
1	SPECIAL MASTER GARRIE: Does Facebook have a
2	record of all the private APIs?
3	MR. EUGENE ZARASHAW: Go ahead, Steven.
4	MR. STEVEN ELIA: There's a record of APIs
5	which are in their entirety gated by a capability,
6	rendering it a private API.
7	To the degree an API is publicly available but
8	might have slightly different behavior for an app with a
9	particular capability, that would be harder to produce.
10	And I can't think of an explicit record of that.
11	SPECIAL MASTER GARRIE: Is the capability what
12	makes the API itself private then?
13	MR. STEVEN ELIA: If the API is entirely gated
14	behind that capability, yes, the capability is what
15	makes it a private API.
16	SPECIAL MASTER GARRIE: So it essentially can
17	only get the capability via contract basically, it
18	sounds like, or in an agreement or something?
19	MR. STEVEN ELIA: These days we have a whole
20	review process. I talked about this in yesterday's
21	testimony called Partner Grant Review for granting
22	capability steps.
23	SPECIAL MASTER GARRIE: But 2014, pre-2014?
24	MR. STEVEN ELIA: Pre-2014, I'm less familiar
25	with. That would generally have been managed by the

Page 114 1 partnership's organization. 2 SPECIAL MASTER GARRIE: But there was no capability API private wall quard, as you're talking 3 4 about? 5 MR. STEVEN ELIA: There were capabilities 6 pre-2014. There was not a tool that made it easy to 7 view current capability grants or the capabilities a particular app has before 2014. 8 9 SPECIAL MASTER GARRIE: So then what about 10 figuring out -- is there any documentation for -- or 11 some documentation, or any -- let's say any 12 documentation for what user data the private APIs could 13 access? I mean, any. That's caps, "ANY". 14 MR. STEVEN ELIA: This is an instance where a 15 phrase Eugene used before I think is relevant. We would 16 often think of the code itself as the documentation. 17 So for a given private API, it would be very explicit what fields could be returned or requested as 18 19 part of that API, and that would be in the code for that 20 API. 21 SPECIAL MASTER GARRIE: The comment in the 22 code at the top of the code file list? 23 MR. STEVEN ELIA: It's not in a comment, but 24 the structure of an API's code has a very explicit delineation of the fields that can make up a response to 25

	Page 115
1	that API.
2	MR. EUGENE ZARASHAW: It went so far as we
3	were able to automatically generate documentation by
4	using some descriptors in the code.
5	SPECIAL MASTER GARRIE: Because if it would
6	so then you could automatically generate that
7	information for the private APIs if they all follow the
8	same if the program
9	MR. EUGENE ZARASHAW: If it becomes well,
LO	that would cover the APIs. It wouldn't cover the exact
L1	behaviors of what happens when they are called, and the
12	differences in behavior if a certain capability is
13	present.
L <b>4</b>	SPECIAL MASTER GARRIE: Yeah. But you would
15	know if it opens an SQL connection to a database and
۱6	writes to the database at some level.
L 7	At some point you have to open or stream a
18	connection to write information or receive information;
19	right?
20	MR. EUGENE ZARASHAW: Right.
21	It would just be a rather difficult task to
22	automatically find out what exactly a deep code stack
23	does.
24	SPECIAL MASTER GARRIE: That I get.
25	But the way the APIs are written, it sounds

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1	like that you could function, at least identify the data
2	elements.
3	MR. EUGENE ZARASHAW: It's clear which ones
4	are reads and which ones are writes.
5	SPECIAL MASTER GARRIE: Yeah.
6	And do they and it defines what those data
7	elements are in the code somehow?
8	MR. EUGENE ZARASHAW: It defines what is the
9	write somebody is trying to make. As an example
LO	let's use an example, the stream publishing API.
L1	It defines as the write that a post may have a
12	body, a link, a photo, and so on. And that's the end of
13	the definition.
L 4	What happens to that data once it passes into
15	the API code depends on exactly how that specific API is
۱6	implemented, and therefore where it's stored.
L7	So, for example, if you're uploading a photo,
18	it may the photo may go into
21	It is not clear from the API description or
22	implementation up front where that storage actually is.
23	You have to dig through many layers of code to
24	understand which storage a specific write would end up

in.

25

	Page 117
1	SPECIAL MASTER GARRIE: So basically there's
2	no documentation?
3	MR. EUGENE ZARASHAW: There's documentation on
4	the APIs but not what they actually do underneath.
5	There's documentation also of what is the
6	product implication of the API. So there's
7	documentation that if I call an API to post to feed, a
8	story will appear in the news feed of the person who
9	owned the access token containing what was posted.
10	But there's not documentation on exactly how
11	that is implemented underneath.
12	SPECIAL MASTER GARRIE: So then I guess my
13	next question is: Does the DIY tool include all the
14	data available that's accessed via the private APIs?
15	I assume no. Definitely not.
16	But anyways, that's my question.
17	MR. EUGENE ZARASHAW: I would defer to Russ on
18	what exactly does include, since I don't know much about
19	the DIY tool.
20	MR. FALCONER: Yeah. And let us get back with
21	a definitive answer on that.
22	But our understanding, which I think we've
23	submitted before, is that the DYI has whatever data
24	might be called up through calling any API end point
25	would be included, you know, in the most comprehensive,

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most human readable form in the DYI.

That's my recollection. But, again, let us get you a formal confirmation on that.

SPECIAL MASTER GARRIE: Yeah. But I'm talking about -- let's be clear. I'm talking about the private APIs where Netflix or somebody else is using a private API to generate data, I would assume, since there's no documentation, that the DIY file -- they wouldn't even know possibly to include it in the DYI file.

Is that right, Mr. Zarashaw?

MR. EUGENE ZARASHAW: I don't know that that's a reasonable assumption just because there's very little documentation anywhere, and yet we have a DYI file that contains quite a lot.

SPECIAL MASTER GARRIE: Yeah. It's a mystery to me as to how the DYI file is actually built and then where does all the -- because all of the inference data that you can derive about a user's behavior isn't stored in the DYI file. It's stored and distributed in other datasets because you don't -- Facebook doesn't provide inferences that it derives about user behavior in the DIY file.

MR. EUGENE ZARASHAW: To my knowledge, the reason it works is many, many years of an effort. It was not a simple project.

	Page 119
1	SPECIAL MASTER GARRIE: Well, that's my
2	question
3	MR. FALCONER: And, again, we're happy to
4	verify this formally. But there are our
5	understanding is there are derived inferences of a
6	DYI file pretty voluminously.
7	SPECIAL MASTER GARRIE: That would be good
8	I mean, yeah, so that would be good to understand.
9	And then which ones aren't. Because it
10	doesn't sound like there's documentation anywhere.
11	So what I'm trying to figure out is since we
12	don't know what actually could be written to any of the
13	systems relating to the user data, how do we know that
14	the data and the user DIY file is possibly even close to
15	complete if there's no recorded documentation?
16	But we'll talk about that offline. I don't
17	want to waste the engineer's time.
18	But that's just my question; right? I mean,
19	because the Court is very clear about it being, you
20	know, data collected from the user's on-platform
21	activity, data obtained from a third party regarding a
22	user's off-platform activities, and data inferred from
23	the user's on-and-off platform activity.
24	And it's clearly stated that you collect in
25	your terms at least in your interrogatories, that you

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collect the Bluetooth, the wifi signal, and all that through the mobile and associate it with the user. But that doesn't -- as far as I can tell, my review of the DIY file didn't actually have that information, just as an example. Or, you know, any of the other data in there.

But you can -- because what I'm trying to understand is there are 40 -- or 55 total systems, but we can't seem to figure out what's actually stored from a user data perspective in the systems because the developer could store whatever they -- data wherever they wanted as they saw fit.

MR. EUGENE ZARASHAW: Mr. Garrie, the solution to this is unfortunately exactly the work that was done to create the DYI file itself.

And the thing I struggle with here is in order to find gaps in what may not be in DYI file, you would by definition need to do even more work than was done to generate the DYI files in the first place.

And if it helps, we can find out approximately the size of the team and the number of months it took that team to do the work to sift through the systems and generate DYI file as a scoping exercise for what it would take to find even more, if there's more to find.

SPECIAL MASTER GARRIE: Well, it sounds like

Page 121 1 TAO is a good place to start. It sounds like to me TAO 2 and maybe, like, one or two other systems are a good place to rest your laurels to go from, based on my 3 4 review of the patents and the conversations so far. 5 But I guess my next question is are user 6 message threads -- they are -- are the user message 7 threads in the DIY tool accessed via the social graph? MR. EUGENE ZARASHAW: If the social graph 8 contains the backing store for the messages product, 9 which is one point called Titan, and I don't recall what 10 the system is called, then yes. 11 12 SPECIAL MASTER GARRIE: And then let's be 13 clear. Like, I mean, to deal with the EU, there has to 14 be some process about the data and the deletion of data and user data at some level to be compliant with GDPR, 15 16 whether it's inferential data or not inferential data. 17 So we'll follow up with Russ on that separately. 18 So then --19 MR. EUGENE ZARASHAW: 23 SPECIAL MASTER GARRIE: Yeah. All right. 24 That's one way to do it.

MR. EUGENE ZARASHAW: It's by far the easier

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	Page 122
1	way to do it. There's a very similar problem of do you
2	sift through a massive box
3	SPECIAL MASTER GARRIE: I get it. You got the
4	point across. I get it. I get it.
5	I'm telling you now, as long as the database
6	stays and isn't stolen. But yeah.
7	So then do private APIs provide data other
8	than the data in the social graph?
9	MR. EUGENE ZARASHAW: Not to my knowledge, in
10	large part because the most of the other systems
11	could not handle the load.
12	SPECIAL MASTER GARRIE: Steven or Mr. Elia?
13	MR. STEVEN ELIA: No. I think almost by
14	definition user data that is part of the Graph API,
15	including any private API, is to be part of the social
16	graph.
17	SPECIAL MASTER GARRIE: All of them or just
18	some of them?
19	MR. STEVEN ELIA: Some of the any API,
20	including the private API, that would, for example,
21	return user data, I would classify that as part of the
22	social graph.
23	SPECIAL MASTER GARRIE: What about inferred
24	user data? So not user input data but user-inferred
25	data. So I'm drawing a distinction; right?

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1	There's user data you input and then there's
2	user data you infer. Two different things.
3	MR. STEVEN ELIA: Sure.
4	I'm not aware of Graph APIs that return
5	inferred data.
6	SPECIAL MASTER GARRIE: So where does all that
7	go?
8	MR. STEVEN ELIA: Other than the very
9	high-level understanding of things like our ads
10	targeting system leveraging that kind of data, I'm not
11	sure what uses inferred data like that.
12	SPECIAL MASTER GARRIE: Because that would be
13	on-platform activity data about a user's behavior that
14	is being inferred and stored and captured by Facebook.
15	MR. STEVEN ELIA: Besides use cases like our
16	own ads targeting, I'm not aware any of that includes
17	anything that would share that with a third-party
18	developer.
19	SPECIAL MASTER GARRIE: Well, not it's not
20	a third-party developer. It's if it it's if it's
21	on so so that would make the Court defines it
22	as data collected from a user's on-platform activity,
23	not data shared with a third party. It's let's be
24	clear.
25	The delimiter isn't whether it's shared. The

	Page 124
1	delimiter is data collected from a user's on-platform
2	activity.
3	MR. STEVEN ELIA: I apologize. I was
4	mentioning that because of the connection to private
5	APIs, which I'm considering to be
6	SPECIAL MASTER GARRIE: Yeah.
7	MR. STEVEN ELIA: APIs called by third
8	parties.
9	SPECIAL MASTER GARRIE: Yeah. Fair enough.
10	But I just want to make the distinction here;
11	right? This is where it becomes more challenging,
12	right, because it's data collected from a user's
13	on-platform activity so you have on-platform messages
14	and you have on-platform user profile and you draw
15	inferences about that user's behavior and store that in
16	the database. We're not sure which database systems.
17	Maybe , like a handful of systems
18	for that's group 1.
19	And then you have data obtained from third
20	parties regarding a user's off-platform activities.
21	That is your APIs; right? That is your data
22	dumps and your private APIs. It doesn't sound like you
23	do data dumps but APIs at a minimum.
24	And then three is data inferred from a user's
25	on-or-off platform activity. Again, not defining what

Page 125 1 inferred is, but it says, you know, on-or-off platform 2 activity. So if you get data returned from Netflix and 3 you make -- you make inferences based on their movie 4 5 watching habit and their chat messages and you write that out to a third party -- one of your internal 7 database systems. So the API covers really the second bucket, not buckets 1 or 3 that the Court's defined. 8 9 But we'll keep going. 10 All right. Partner integration. And then we'll take a break, and then I think Counsel Falconer 11 12 will be closer to the finish line. 13 So partner integration, what access does --14 'cause you define in the -- in multiple different 15 places, you define strategic partners, such as Amazon, 16 Etsy, Netflix, et cetera. 17 What data did they get for that relevant time 18 period? 19 MR. STEVEN ELIA: Each of those would be its 20 own unique case and depends on what is the specific user 21 experience they were building. And the agreements, the 22 contracts we had with them would outline what kind of

I'm not that familiar with all of those

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data would be made available as part of that and what

they would be allowed to do with that.

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1	specific agreements.
2	SPECIAL MASTER GARRIE: What's a strategic
3	primary you are familiar with? We can work backwards
4	from that.
5	MR. STEVEN ELIA: Bing is an example of one
6	which I've implemented some of the APIs they would use.
7	Bing the search engine.
8	SPECIAL MASTER GARRIE: Yeah. So that's good
9	because that's something I know something about.
10	All right. So Bing and Facebook. You can
11	search friends of friends on Bing; right?
12	How did that work?
13	MR. STEVEN ELIA: I'm not aware of the ability
14	to search that on Bing.
15	What I am aware of is an API we had for them
16	that shared public content on Facebook. So this were
17	things like post photos, videos that had public privacy,
18	anyone on Facebook could see it, and those kind of posts
19	could show up if they were relevant to your search
20	query, for instance.
21	SPECIAL MASTER GARRIE: And did Facebook get
22	any data back from Bing?
23	MR. STEVEN ELIA: I'm only aware of a unit
24	directional API here of Facebook pushing data to Bing.
25	SPECIAL MASTER GARRIE: Are there any

	Page 127
1	bidirectional partner APIs?
2	MR. STEVEN ELIA: I can't think of any off the
3	top of my head.
4	SPECIAL MASTER GARRIE: Where would one look
5	to find that out? The engineer, not not just
6	MR. STEVEN ELIA: Sure.
7	So a rather laborious exercise I could carry
8	out as an engineer, for instance, would be to start with
9	a list of all the capabilities, including ones that have
LO	ever existed.
<b>L1</b>	For each one, look to see whether it gated an
12	API. It would be much more difficult to see did it
13	modify behavior of an otherwise public API?
L <b>4</b>	And in some cases I might have to go through
15	the entirety of the code history for that API or frankly
۱6	other files in the repository that may have referenced
L 7	that capability to see what that did.
18	I don't think even in that case that that
19	would yield any insight into an API the partner provided
20	that Facebook would have called.
21	SPECIAL MASTER GARRIE: What about looking at
22	the firewall logs for the inbound data?
23	MR. STEVEN ELIA: I'm not familiar with that
24	part of our infrastructure and what's possible there.
25	MR. EUGENE ZARASHAW: The one challenge I

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1	recall from looking at the inbound logs is that we did
2	not store post-request bodies, and most write APIs were
3	post requests.
4	SPECIAL MASTER GARRIE: That is very true.
5	Okay. Did and it sounds like and I did
6	look that the A private well, the strategic
7	partners had varying network access, additional
8	computing and storage.
9	Is that accurate?
10	MR. STEVEN ELIA:
12	SPECIAL MASTER GARRIE: Yeah. That's it.
13	MR. STEVEN ELIA:
17	SPECIAL MASTER GARRIE: Did Facebook allow
18	data connections between the Facebook and its strategic
19	partners?
20	MR. EUGENE ZARASHAW: What do you mean by
21	data connections in this case?
22	SPECIAL MASTER GARRIE: Did they allow
23	partners to connect to Facebook's data stores?
24	MR. EUGENE ZARASHAW: No. All access was
25	through the API.

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1	SPECIAL MASTER GARRIE: So scheduled API
2	calls?
3	MR. EUGENE ZARASHAW: Would WebHooks count?
4	SPECIAL MASTER GARRIE: Yeah, I guess.
5	What about FTP, SFTP servers?
6	MR. EUGENE ZARASHAW: Not to my knowledge.
7	That's terrifying.
8	MR. STEVEN ELIA: I'm also not aware of any
9	instances like that.
10	SPECIAL MASTER GARRIE: Is there a difference
11	between custom APIs and private APIs?
12	MR. STEVEN ELIA: I wouldn't use the phrase
13	"custom API" myself. That doesn't mean anything to me.
14	Maybe given a specific context sentence it was used in,
15	I'd be better able to answer that.
16	SPECIAL MASTER GARRIE: That didn't mean
17	anything to me either so I see it a lot, so I was
18	just wondering if Facebook created a term called
19	"custom APIs."
20	So I assume then there are query-able Hive use
21	cases for data that exists now.
22	Is that a is that accurate?
23	MR. EUGENE ZARASHAW: Do you mean for API
24	usage data?
25	SPECIAL MASTER GARRIE: Or for debugging.

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1	MR. EUGENE ZARASHAW: There's a fair bit of
2	data in
	and so on.
4	SPECIAL MASTER GARRIE: Right.
5	So there are other tools for querying.
6	Is there a query-able Hive use cases today for
7	user data?
8	MR. EUGENE ZARASHAW: I'm not sure what you
9	mean by use cases.
10	There are Hive tables that can be queried
11	using our standard query UI. And if you know what table
12	to look in and it has the right fields, you can query
13	for user data.
14	SPECIAL MASTER GARRIE: Is there a list of
15	or
16	So the answer is yes, you have the use
17	there are use cases for where you're querying high data
18	tables?
19	MR. EUGENE ZARASHAW: Yes.
20	SPECIAL MASTER GARRIE: Could you how
21	Sorry. I'm just thinking.
22	So then where was data acquired by a partner
23	retrieved from?
24	MR. EUGENE ZARASHAW: It would depend on the
25	API but most APIs are backed by

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1	SPECIAL MASTER GARRIE: What about you,
2	Mr. Elia, do you agree?
3	MR. STEVEN ELIA: I agree with that statement.
4	MR. EUGENE ZARASHAW: There are some system
5	specific APIs that for a given set or certain some
6	specific APIs for product would may be backed by a
7	different back end.
8	So as an example, messaging has its own
9	separate back end, and any of those Titan APIs you
10	mentioned earlier would be partly backed by
12	Another example would be reading the news feed
13	for a user, reading the stories they have posted
16	SPECIAL MASTER GARRIE: Where is the message
17	back end?
18	MR. EUGENE ZARASHAW: I don't recall the new
19	name of it, but I remember it being looking up some
20	of the 55 systems, the message back end was on that
21	list.
22	SPECIAL MASTER GARRIE: Okay. It would be
23	good to identify which one that is.
24	And then the user data and the message back
25	end I assume stores way more data than what sits in the

	Page 132
1	DIY file.
2	MR. EUGENE ZARASHAW: I'm not sure what's in
3	the DIY file, so
4	SPECIAL MASTER GARRIE: DIY, do it yourself.
5	Sorry.
6	MR. EUGENE ZARASHAW: No, no. I meant I'm not
7	sure what's in that file. I'm not sure what it actually
8	contains versus what's in the back end.
9	SPECIAL MASTER GARRIE: All right.
10	MR. EUGENE ZARASHAW: To answer your earlier
L1	question, the name of the current messenger back hand is
12	So it is No. 4 on that 55 item list.
13	SPECIAL MASTER GARRIE: Okay. DYI files.
L <b>4</b>	So then can a system exist that queries the
15	Hive for data to create inferences and store it
16	elsewhere?
L 7	MR. EUGENE ZARASHAW: Yes.
18	SPECIAL MASTER GARRIE: Do you know what
19	systems that those inferences are being written up to?
20	MR. EUGENE ZARASHAW: I don't know a system
21	like that could exist. I don't know if it does. But if
22	one were to exist, I would likely ask the ad targeting
23	team if they have something like that.
24	SPECIAL MASTER GARRIE: Okay. You said end
25	targeting team

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1	MR. EUGENE ZARASHAW: Ads targeting. Yes.
2	SPECIAL MASTER GARRIE: Okay. Did you say
3	"ends" or "end"?
4	MR. FALCONER: Ads, a-d-s.
5	MR. EUGENE ZARASHAW: Ads.
6	MR. STEVEN ELIA: Advertisements.
7	SPECIAL MASTER GARRIE: Oh, advertising
8	targeting team. Got it. Ads. That makes more sense.
9	Sorry. Go ahead.
10	MR. EUGENE ZARASHAW:
13	SPECIAL MASTER GARRIE: But you could look for
14	code that talks to the
15	MR. EUGENE ZARASHAW:
17	SPECIAL MASTER GARRIE: Yeah. But your
18	production code being the consumer face you use
19	you say production, that's the consumer facing. That's
20	not your research, your development, or your
21	engineering.
22	MR. EUGENE ZARASHAW: Generally for any kind
23	of randomized access, for example, if we want to serve
24	ads, the data would have to be pulled out of Hive into

another system for immediate data access. Hive has very

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	Page 134
1	high latency.
2	SPECIAL MASTER GARRIE: Oh.
3	MR. EUGENE ZARASHAW: In the minutes.
4	So one example system on that list is No. 9,
5	Laser, which does not store any data of its own but it
6	is a cache in front of other systems that are slow and
7	can't handle the load, such as can be TAO, can be Hive,
8	and so on, to accelerate them. So it's an in-memory
9	cache in front of a slower system.
10	SPECIAL MASTER GARRIE: That would be very
11	helpful, I guess, Counsel Falconer, if you can identify
12	those systems that are caching systems versus systems
13	that actually have beyond just user experience.
14	MR. FALCONER: Mm-hm. Yeah. Understood. We
15	can do that.
16	SPECIAL MASTER GARRIE: Okay. So then did
17	integration involve Facebook so then is there any
18	centralized area where you would receive data from a
19	partner. We've established there's no way to
20	determine for a particular user; right? I log in
21	with whatever information, you would get that data back
22	from a partner.
23	Do you know where that data would be stored?
24	I'll give you an example.
25	I go to Netflix, I use my Facebook ID. You

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get back a set of movies I like. I don't believe the set of movies I like that Netflix shares with Facebook sits in my DIY file about me.

MR. EUGENE ZARASHAW: So the one way I could think that working is there's an API for posting that a user has watched something. It's the graph -- it's the graph actions API.

So at one point I believe Netflix may have been using it. I don't recall for sure. Steven might know. But --

A site -- if some site out there provided videos that people could watch and that site integrated with a Facebook API and made post requests to this API every time a user who had tossed the app, watched a movie, we would likely store that information in two places in duplicate:



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SPECIAL MASTER GARRIE: I got it.

No reflection on this hearing.

Mr. Elia, is there anything you'd like to add to the examples?

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1	MR. STEVEN ELIA: Nope.
2	SPECIAL MASTER GARRIE: And then so then do
3	we is there any way to figure out from this list of
4	systems which ones stored data that was accessed and/or
5	received by partners, especially in cases where access
6	was not through the Graph API? So
7	MR. EUGENE ZARASHAW: I don't know of any ways
8	for partners to get data outside of the API.
9	SPECIAL MASTER GARRIE: The Graph API or any
LO	API?
L1	MR. EUGENE ZARASHAW: I don't I think it's
12	all Graph API now.
13	Steven, correct me if I'm wrong.
L <b>4</b>	We used to have a rest API that we folded into
15	it but it was still the same exact API with slightly
۱6	different parameters.
L 7	MR. STEVEN ELIA: There may be a small set of
18	APIs that aren't based on the Graph API even today, but
19	those would be well understood identified. We would
20	have a list of those.
21	It's plausible that there could exist
22	something not on that list.
23	But as a general matter of policy, again,
24	there's a whole review process to go through whenever
25	you're building this kind of API that would result in

	Page 137
1	such an API winding up in this list.
2	SPECIAL MASTER GARRIE: And pre-2014, that
3	didn't exist?
4	MR. STEVEN ELIA: This type of review process
5	I mention was even later that was started in 2018, 2019,
6	something like that.
7	SPECIAL MASTER GARRIE: All right. And the
8	Graph API that's now consolidated was not consolidated
9	to a single API pre-20 what
LO	When did the graph API become the omnibus API
L1	for the partner access and receive?
12	MR. EUGENE ZARASHAW: Go ahead, Steven.
13	MR. STEVEN ELIA: For the general populous
L <b>4</b>	'15/2016 was when we removed access to some of those
15	other APIs, like FQL. But there, I believe, were
16	capabilities allowing access to those for a few more
L 7	years.
18	MR. EUGENE ZARASHAW: To add to that, the
19	previous set of APIs also known as the rest APIs still
20	followed the same semantics of needing an app ID,
21	needing permissions, needing access tokens.
22	It was just different semantics and how to
23	call them.
2 <b>4</b>	MR. STEVEN ELIA: I would also add to that
25	that I'm not aware of any data, and I'm highly confident

	Page 138
1	that the only data available through that legacy rest
2	API FQL was also available over the Graph API. Those
3	would be like duplicate APIs.
4	SPECIAL MASTER GARRIE: Who is the engineer
5	that built the DYI tool?
6	MR. EUGENE ZARASHAW: I would have to defer to
7	Russ on this one. It would be an entire team.
8	SPECIAL MASTER GARRIE: Okay. But on every
9	team there's an engineer or two engineers that build
10	that do that are the pillars of the team.
11	MR. FALCONER: I go ahead. Sorry.
12	MR. EUGENE ZARASHAW: I was going to say, it's
13	a more than two-pillar engineer undertaking.
14	MR. FALCONER: Yes. And that I don't we
15	don't have names or statistics, you know, at our
16	fingertips on that. We would be happy to get them.
17	But we have my understanding is the same as
18	Mr. Zarashaw's about the scope of the project and how
19	many people were involved.
20	SPECIAL MASTER GARRIE: Yes. So 30 engineers
21	to one pillar? So a 60 engineer team?
22	MR. EUGENE ZARASHAW: I would be impressed if
23	a 60 engineer team could have completed DYI tool in
24	six months.
25	SPECIAL MASTER GARRIE: Not six months.

	MONET CONTIDENTIAL
	Page 139
1	Figure 18 months. But yeah. And then they iterated on
2	it for several years.
3	But anyways so specialized consumer
4	experiences, are they different they're defined
5	differently. Are they the same, though, specialized
6	consumer experiences?
7	MR. EUGENE ZARASHAW: I'm not sure what that
8	means.
9	SPECIAL MASTER GARRIE: So as I understood it,
10	specialized consumer experiences, according to the
11	Interrogatory 4, page 374:
12	"Facebook developed private APIs to
13	enable select partners to offer custom
14	seamless experiences for users seeking to
15	more closely integrate their Facebook
16	experiences with other things they'd like
17	to do, such as listening to music,
18	watching movies, or pursuing and sharing
19	interests and hobbies. These custom
20	experiences are built by companies such as
21	• "
22	MR. EUGENE ZARASHAW: So it sounds like that
23	refers to the whole set of private APIs where we allowed

refers to the whole set of private APIs where we allowed third parties to do customized integration into some aspects of how their experience worked with ours.

24

25

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1	As an example, I recall we did special
2	integration for that you mentioned where when
3	you were sharing with someone, you
4	could also send them a message on Facebook about it,
5	where for almost anyone else, there was no ability to
6	send a message via an API but we enabled it via contract
7	for this specific use case.
8	SPECIAL MASTER GARRIE: And theoretically that
9	would be related to today?
10	MR. EUGENE ZARASHAW: Yes.
11	SPECIAL MASTER GARRIE: So it's either in the
12	contract or the code. All right.
13	All right. So then I had some I guess DYI
14	questions but we'll ask those later.
15	Measurement Partners, that's another term
16	that's been defined as having different access, and
17	it's where is it? do you know what
18	Measurement Partners are?
19	MR. EUGENE ZARASHAW: I loosely know what they
20	are but this is not my area of expertise.
21	SPECIAL MASTER GARRIE: Mr. Elia?
22	MR. STEVEN ELIA: Similar. I wouldn't have
23	worked on any of their APIs.
24	SPECIAL MASTER GARRIE: They had their own set
25	of APIs; right?

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1	MR. EUGENE ZARASHAW: I don't know.
2	SPECIAL MASTER GARRIE: Mr. Elia?
3	MR. STEVEN ELIA: I don't specifically know.
4	If that was represented as an example of those
5	customized integrations, then I would imagine that
6	would be true, yes.
7	SPECIAL MASTER GARRIE: Do you know who was on
8	the Measurement Partner engineering team, or who to talk
9	to or
10	MR. STEVEN ELIA: I don't know.
11	MR. EUGENE ZARASHAW: We would have to follow
12	up to find who's actually on the team.
13	SPECIAL MASTER GARRIE: And the reason I ask
14	is because there's a specific distinction and I'm trying
15	to trace this back to these systems that exist because
16	it says in your exhibit you know, in your
17	interrogatory or anyways, the point is that there's
18	references to individually identifiable user content
19	that Facebook provides to the Measurement Partners
20	that's stored.
21	And what's not clear to me is if that same
22	information exists in the DYI file, and if it doesn't
23	exist in the DYI file, where does it exist? Because you
24	make it a point to state that you have this data and
25	you're providing it.

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And if it comes and my point is and this
is worth noting, Counsel, for Facebook generally, if
it's duplicative, that's great. But someone has to say
it is duplicative because nobody is saying it's
duplicative.

MR. FALCONER: Yeah. And, again, this is starting to veer more into the guts of the ads business, the advertising business. And so I think if this is a subject matter that the special master wants to ask more questions on, I think it would be better served getting -- putting you in touch with different people who were more familiar with that part of the business.

SPECIAL MASTER GARRIE: I'm not interested in the ad part of it. I'm interested in the fact that -- and I can point you to what triggered it. It's an exhibit now exhibit in the depo as 128. It's page 495, and 128, page 374. And there's very explicit references to user, like individual identifiable -- which we've decided is not a term -- individually identifiable user content that Facebook provides to Measurement Partners.

What isn't stated is where it's stored, what is collected, and if it's duplicative of the DYI files.

And that's the same for the -- these SCEs or these specialized consumer experiences. And it's not clear to me -- and it's going to be important to

	Indie i Colvine
	Page 143
1	understand what user data is collected in for these
2	experiences that you've identified Facebook has
3	identified, is it duplicative or is it in other one of
4	these systems? Because there's no identification about
5	where this data exists but it's clearly data that is
6	created or collected from the user's on-platform
7	activity.
8	MR. FALCONER: Sure. Yeah. Understood on all
9	that.
10	And, again yeah. So let us find the right
11	person I understand what you're interested in, and
12	let us find the right person who can talk with you about
13	that.
14	SPECIAL MASTER GARRIE: Then for user mobile
15	device data, it sounds like we'll need a different set
16	of engineers to provide that, unless it's completely
17	duplicative of what's in the DYI file.
18	But, again, that's not established, and I
19	can't figure out from the systems you're identifying
20	what is or is not within the DYI file, specifically
21	around the mobile user data. Because they go to
22	Facebook's mobile app using Facebook engagement.
23	So, again but I think it sounds like,

Mr. Zarashaw and Mr. Elia, you're not in a position to

answer the questions about the mobile data?

24

25

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1	MR. EUGENE ZARASHAW: I'm not.
2	MR. STEVEN ELIA: Are you referring to data,
3	for example, collected from our mobile apps?
4	SPECIAL MASTER GARRIE: Yeah. That is part of
5	the user.
6	MR. STEVEN ELIA: That's also again something
7	I'm not familiar with. I wouldn't believe that, though,
8	to be stored any differently from data collected
9	generally from the web or elsewhere. I wouldn't think
LO	there's a separate, for example, data store of only
L1	mobile data, for instance.
12	SPECIAL MASTER GARRIE: Yeah. But there's
13	different mobile there's different data that can be
L <b>4</b>	collected off mobile devices, and if it's part of the
15	social graph and available, about the user activity.
16	MR. EUGENE ZARASHAW: I think the challenge
L 7	I'm having is I don't actually know what's in the DYI
18	file and I don't know what mobile data is collected. So
19	it's difficult to do more than guess on what is stored
20	for which.
21	SPECIAL MASTER GARRIE: Yeah. I mean, I could
22	tell you in the terms of services that were provided by
23	Facebook, it indicates that the Bluetooth ID, the
24	network ID, a bunch of ID is collected.
25	So. I mean, again, Exhibit 128, page 487 kind

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1	of delineates a bunch of that, just to point Facebook
2	sort of in the direction of what I'm asking about or why
3	I'm asking about it.
4	Because I did look at the files and I did not
5	see these data elements in there, so I don't know if
6	it's possible they didn't access it through their mobile
7	devices or mobile or maybe they you know, but this
8	may end up being is I'm just curious to understand that
9	piece of it.
10	And then the last set of questions, we can
11	either power through them or we can take a break.
12	What would Mr. Elia or Mr. Zarashaw prefer?
13	MR. EUGENE ZARASHAW: I would love a break.
14	MR. STEVEN ELIA: Same.
15	SPECIAL MASTER GARRIE: All right. That
16	sounds good. I mean, the DYI file, as far as I could
17	tell, has device ID, mobile servers provider, and
18	country code. But not the other elements that are
19	identified.
20	So we will take a you guys want to take a
21	five-minute break?
22	Is that a yes, Mr. Elia.
23	MR. STEVEN ELIA: Yes.
24	SPECIAL MASTER GARRIE: We'll take a
25	five-minute break. I'm supposed to put everybody in the

	Page 146
1	breakout room so that's probably we'll go off the
2	record.
3	(Break taken in proceedings.)
4	SPECIAL MASTER GARRIE: All right. We're
5	going to go back on the record.
6	I'll take, like we have, if there are
7	questions for plaintiffs, and then I will jump into
8	the
9	Back on the record?
10	Plaintiffs, are there any questions you would
11	like to ask?
12	MS. WEAVER: Yes.
13	Can you query the Hive with the Facebook user
14	ID or some other identifier, and have they done that for
15	the named plaintiffs, given the latency issue that
16	Mr. Zarashaw mentioned?
17	SPECIAL MASTER GARRIE: I mean, the engineers
18	don't really answer the second part of the question, but
19	the first part of the question is can can you query
20	the Hive for user data? I think the user that we
21	already said is yes.
22	Is that correct, Mr. Zarashaw?
23	MR. EUGENE ZARASHAW:

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SPECIAL MASTER GARRIE: It would be possible,
though, to identify the largest tables within the Hive
and how those data schemas were; right? The top 10
tables or whatever it may be.
MR. EUGENE ZARASHAW: Yes.
MS. WEAVER: May I ask a follow-up?
SPECIAL MASTER GARRIE: You may ask a question
and then I will
MS. WEAVER: Fine.
Is there a schema or fields for Hive or
descriptors so that we can identify the top 10 or some
way to identify what we could query using user ID?
SPECIAL MASTER GARRIE: I will reask the
question.
If we could identify the top 10 tables, can
you extract the fields for those top 10 tables

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1	because whatever X number of tables. That's
2	possible; right?
3	MR. EUGENE ZARASHAW: It is possible. But the
4	only exception is going to be that some of those fields
5	may themselves be complex things such as JSON encoded
6	objects, and the names may not make sense.
7	SPECIAL MASTER GARRIE: Yeah.
8	I think that got at your question; right?
9	MS. WEAVER: Yes. Thank you.
LO	MR. EUGENE ZARASHAW: But given yes, but we
L1	could find what are the largest tables by size and get
12	their schemas.
13	SPECIAL MASTER GARRIE: Okay. Any other
L <b>4</b>	questions from plaintiffs?
15	MS. WEAVER: So many, but we'll hold for now.
16	SPECIAL MASTER GARRIE: Okay. Well, just so
L 7	you're everybody is aware, I see the finish line may
18	be 20 minutes away, so you best brainstorm away.
19	My next questions are really focused around
20	the Graph API.
21	Mr. Zarashaw, Mr. Elia, are you guys either
22	of you familiar with the Graph API Explorer application?
23	MR. STEVEN ELIA: I am.
2 <b>4</b>	MR. EUGENE ZARASHAW: I am.
25	SPECIAL MASTER GARRIE: Okay. How many

	Page 149
1	versions of Graph API have been created during the
2	relevant time period, to your knowledge?
3	MR. STEVEN ELIA: I don't know off the top of
4	my head, but we typically have three or four different
5	versions in any calendar year, and we started versioning
6	in, again, roughly 2015 or so.
7	SPECIAL MASTER GARRIE: And before 2015?
8	MR. STEVEN ELIA: Before then, there weren't
9	versions to the degree we introduced changes that were
10	not backwards compatible to APIs. We had different
11	mechanisms for doing so.
12	SPECIAL MASTER GARRIE: Okay. Has GAE I'll
13	call it GAE ever accessed data from sources other
14	than the social graph?
15	MR. STEVEN ELIA: The Graph API Explorer is
16	only able to access graph APIs, and so
17	SPECIAL MASTER GARRIE: Since its inception or
18	as of 2015?
19	MR. STEVEN ELIA: Since inception.
20	SPECIAL MASTER GARRIE: But I said the social
21	graph.
22	MR. STEVEN ELIA: Could you repeat the full
23	question?
24	SPECIAL MASTER GARRIE: So has GAE ever
25	accessed data from sources other than the social graph?

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1	MR. STEVEN ELIA: So the Graph API can call
2	any arbitrary Graph API. There are Graph APIs that are
3	unrelated to the social graph.
4	SPECIAL MASTER GARRIE: So what user data
5	sources so then what are those?
6	MR. STEVEN ELIA: Commonly this would be APIs
7	that have nothing to do with users. There are APIs, for
8	example, for managing business assets like ads or pages.
9	SPECIAL MASTER GARRIE: Specific to users, so
10	the GAE just calls Graph APIs, and then by definition,
11	it talks to just a social graph as it relates to user
12	data or user inferred data?
13	MR. STEVEN ELIA: Graph APIs, as they relate
14	to user data deal with just the social graph, I would
15	say. I think that was what you were asking.
16	SPECIAL MASTER GARRIE: That is correct.
17	So is the answer yes?
18	MR. STEVEN ELIA: I would answer yes.
19	SPECIAL MASTER GARRIE: So then what user data
20	sources did each version of the Graph API have access
21	to?
22	MR. STEVEN ELIA: Sure. By version.
23	And I think we're back at earlier questioning
24	and difficulties when it comes to identifying things
25	like which of these 55 systems might have user data.

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1	SPECIAL MASTER GARRIE: Mr. Zarashaw, do you
2	agree?
3	MR. EUGENE ZARASHAW: Yes. They're going to
4	be there's, again, the probabilistic answer, which is
5	But then there's
6	going to be in each case APIs that have dedicated
7	systems. And depending on the time we added the
8	specific API or with which version, the other systems
9	might have changed.
10	So, again, things like the storage of new
11	seat posts, such as would be in
	back end, messages would be in messaging
13	back end. Photos themselves have the dedicated
14	back end, while the meta data about the photo might be
15	in the back end.
16	SPECIAL MASTER GARRIE: My question is: Is
17	that data and I guess we need to get I think the
18	DYI, your engineer or engineering engineers will
19	answer is that duplicative or not of what's in the DYI
20	file?
21	MR. EUGENE ZARASHAW: Exactly.
22	SPECIAL MASTER GARRIE: Does Facebook store
23	data about users it's not directly associated with the
24	Facebook ID but is capable of being associated with a
25	specific user?

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1	I think the answer to that we've established
2	is yes.
3	MR. EUGENE ZARASHAW: Yes.
4	SPECIAL MASTER GARRIE: Am I right, the answer
5	is "yes"?
6	MR. EUGENE ZARASHAW: The answer is yes, the
7	IP address associated data.
8	SPECIAL MASTER GARRIE: IP, OS, Windows
9	update, time and length of chats, length of video,
10	whatever. There's lots of metadata about data.
11	Are there different processes for different
12	data?
13	MR. EUGENE ZARASHAW: What do you mean by
14	processes in this case?
15	SPECIAL MASTER GARRIE: I guess what I'm
16	thinking here is for data that you infer from a user
17	profile and a user's action, are there processes that
18	like how that data is written out?
19	MR. EUGENE ZARASHAW: I would not call it
20	processes. It would just depend on the implementation
21	of the specific use case, where the specific use case
22	might leverage different pieces of infrastructure and
23	different systems and flow in different ways, depending
24	on how the engineers implementing decided to do it.
25	SPECIAL MASTER GARRIE: There's no

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1	documentation here.
2	MR. EUGENE ZARASHAW: There might be some
3	documentation for specific use cases as they were built.
4	And generally that documentation falls out of date
5	rapidly versus the actual evolving systems.
6	SPECIAL MASTER GARRIE: Is there a database or
7	a central or a set of central databases for use
8	cases?
9	MR. EUGENE ZARASHAW: I don't know of one.
10	Steven?
11	MR. STEVEN ELIA: Same. I'm not aware of any.
12	SPECIAL MASTER GARRIE: That's a question
13	worth following up on.
14	So then when I look at this list,
15	Mr. Zarashaw, of 55 systems, are there any of these
16	55 systems you can shed light on that we haven't
17	discussed?
18	MR. EUGENE ZARASHAW: I'm pulling up the list
19	right now.
20	SPECIAL MASTER GARRIE: I can start at the
21	top.
22	
23	MR. EUGENE ZARASHAW: Last time I looked at
24	it, it stores data that is advertiser based rather than
25	user based. So data about

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1	
2	SPECIAL MASTER GARRIE: I did too, which is
3	why maybe how could it well, yes. All right.
4	No. 2, Again
5	MR. EUGENE ZARASHAW: I don't know what that
6	one is.
7	SPECIAL MASTER GARRIE: And Mr. Elia, I assume
8	you don't know as well?
9	MR. STEVEN ELIA: That's right. I don't know.
10	SPECIAL MASTER GARRIE:
11	MR. EUGENE ZARASHAW: Don't know.
12	MR. STEVEN ELIA: Me neither.
13	SPECIAL MASTER GARRIE: is
14	and different?
15	MR. EUGENE ZARASHAW: I believe so. One of
16	these is the messaging back end. I don't know what the
17	other one is.
18	SPECIAL MASTER GARRIE: Got it.
19	And, Mr. Elia, would you by chance know the
20	difference between and and
21	MR. STEVEN ELIA: I don't.
22	SPECIAL MASTER GARRIE: Okay.
23	MR. EUGENE ZARASHAW: is the messaging
24	back end. I don't know what
25	SPECIAL MASTER GARRIE: And they would have

	Page 155
1	the messaging back end would have its own, like just
2	so I understand,
4	MR. EUGENE ZARASHAW: I don't know that it
5	even does. It might be a completely separate storage
6	system or it might be an abstraction layer on top of
7	another storage system. We would need to dig in to
8	understand how it's built.
9	SPECIAL MASTER GARRIE:
10	MR. EUGENE ZARASHAW: I don't know.
11	SPECIAL MASTER GARRIE: Not at Disneyland.
12	MR. STEVEN ELIA: I'm not familiar with it
13	either.
14	SPECIAL MASTER GARRIE: And if counsel for
15	Facebook, if anybody from Facebook has knowledge of what
16	any of these systems are, feel free to raise your hand
17	and Zoom, and I will gladly welcome any insight.
18	
19	MR. EUGENE ZARASHAW: It is a text search
20	service, but I don't know what it's actually used for,
21	given we also have which can also do this.
22	MR. STEVEN ELIA: And I'm not familiar with
23	it.
2 <b>4</b>	SPECIAL MASTER GARRIE:
25	MR. EUGENE ZARASHAW: It's a blob store for

	Page 156
1	storing images and videos and other large blobs.
2	SPECIAL MASTER GARRIE: You have several
3	patents using that as well actually for that storage.
4	Laser?
5	MR. EUGENE ZARASHAW: It is caching layer in
6	front of slower forms of storage.
7	SPECIAL MASTER GARRIE: And
8	MR. EUGENE ZARASHAW: Don't know.
9	Steven?
LO	MR. STEVEN ELIA: Me neither.
L1	SPECIAL MASTER GARRIE: Manifold or Manifold?
12	MR. EUGENE ZARASHAW: Manifold is another blob
13	storage service. I don't remember if it's came
L <b>4</b>	before or after
15	SPECIAL MASTER GARRIE: Do we know what's
16	stored in that one?
L 7	MR. EUGENE ZARASHAW: If I remember correctly,
18	photos and videos. I actually don't recall which one is
19	being transitioned to which.
20	SPECIAL MASTER GARRIE: Again, knowing which
21	ones transition and which ones don't will be helpful.
22	Which ones
23	MR. EUGENE ZARASHAW: It might also just be a
24	slightly different blob storage case and both of them
25	are long term, going to be there.

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1	I don't recall the distinction but both do
2	store blobs. It's akin to Amazon S3.
3	SPECIAL MASTER GARRIE: Okay. All right.
4	Memcache, we know, we discussed.
5	we don't know.
6	
7	MR. EUGENE ZARASHAW: No.
8	SPECIAL MASTER GARRIE: Mr. Steven?
9	MR. STEVEN ELIA: I'm not familiar, no.
10	SPECIAL MASTER GARRIE:
11	MR. EUGENE ZARASHAW: No.
12	MR. STEVEN ELIA: Me neither.
13	SPECIAL MASTER GARRIE: ?
14	MR. EUGENE ZARASHAW: Nope.
15	MR. STEVEN ELIA: Me neither.
16	SPECIAL MASTER GARRIE:
17	MR. EUGENE ZARASHAW: No.
18	MR. STEVEN ELIA: Me neither.
19	SPECIAL MASTER GARRIE: Server?
20	MR. EUGENE ZARASHAW: I know what it is but
21	not what we use it for.
22	SPECIAL MASTER GARRIE: I mean, it's a data
23	analytics tool at its core.
24	MR. EUGENE ZARASHAW: Exactly. I've seen us
25	use it for things like

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1	
3	SPECIAL MASTER GARRIE: Yeah. I'm not exactly
4	sure where user data fits in there, but
5	
6	MR. EUGENE ZARASHAW: It's a counter service
7	used by the integrity teams to count how many times
8	various things have happened.
9	SPECIAL MASTER GARRIE: Does it record API
LO	requests?
L1	MR. EUGENE ZARASHAW: It might be used to
	, but it wouldn't be in a particularly
13	identifiable way.
L <b>4</b>	SPECIAL MASTER GARRIE: TAO we know.
15	we know.
16	
L 7	MR. EUGENE ZARASHAW: Don't know.
18	MR. STEVEN ELIA: I'm not aware.
19	SPECIAL MASTER GARRIE: Okay.
20	MR. EUGENE ZARASHAW:
22	SPECIAL MASTER GARRIE: So that would know if
23	we had user data in there.
2 <b>4</b>	MR. EUGENE ZARASHAW: I don't recall the exact
25	interplay between the second of the second o

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1	part	is	where
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SPECIAL MASTER GARRIE: Before we get to the remainder of this list, this is just for Facebook.

For the other systems that you removed into these five buckets of internal test systems, systems Facebook teams, systems that do not serve, systems that do not store, and other systems, I need you to put of the -- from the 149 systems which you cut it down, which ones fall into which bucket; right?

So this one falls in this bucket, this one is in this bucket, just so I have an understanding of how it was organized.

MR. FALCONER: Yeah. Absolutely. Yeah.

So, I mean -- yeah. We're more than happy to do that.

And then, you know, the questions on these sources, you know, we had brought Mr. Elia and Mr. Zarashaw -- those are the folks we identified as most knowledgeable and kind of most likely to be able to answer the Special Master's questions today based on what was in the orders.

SPECIAL MASTER GARRIE: I get it.

MR. FALCONER: Anything on these sources, you know, we veered into a little DYI and advertising and

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1	privacy, anything on that, we're happy to identify the
2	right people, get them in front of you so you can ask
3	the questions you have. Anything like that you need,
4	we're more than happy to do it.
5	SPECIAL MASTER GARRIE: Yeah. I get it. I
6	think it was productive. We only have another
7	25 systems to quickly run through.
8	
9	MR. EUGENE ZARASHAW: No.
10	MR. STEVEN ELIA: I'm not familiar.
11	SPECIAL MASTER GARRIE:
12	MR. EUGENE ZARASHAW: It's an offline backup
13	system or partly offline backup system.
14	SPECIAL MASTER GARRIE: All right. Well, it
15	will be very helpful for me from the Facebook lawyers,
16	remove all the backup systems, all the offline memory
17	caching, caching systems from this list, because I think
18	it will get substantially smaller.
19	MR. FALCONER: Right.
20	SPECIAL MASTER GARRIE: we talked about.
21	ZippyDB or how do you say that? Akkio
22	or Akkio?
23	MR. EUGENE ZARASHAW: I don't know what Akkio
24	is.
25	MR. STEVEN ELIA: I have a high-level

	Page 161
1	understanding of ZippyDB, although it's not something
2	I've used. I think it has data for some ephemeral use
3	cases, things like notifications, for example.
4	SPECIAL MASTER GARRIE: Like notifications to
5	users, like hurricane is coming?
6	MR. STEVEN ELIA: I'm not sure what kind of
7	notifications.
8	SPECIAL MASTER GARRIE: But it's outside
9	messaging. It's push notifications to the user, not
10	messaging notifications?
11	MR. STEVEN ELIA: Again, I'm not sure which
12	specific kinds.
13	SPECIAL MASTER GARRIE: Okay.
14	? Is that not a caching
15	tool?
16	MR. EUGENE ZARASHAW: I don't know what that
17	is. I'm learning a lot about our systems from this
18	experience.
19	SPECIAL MASTER GARRIE: As am I.
20	Mr. Elia?
21	MR. STEVEN ELIA: I'm not familiar with it
22	either.
23	SPECIAL MASTER GARRIE: All right.
	?
25	MR. EUGENE ZARASHAW: I don't know.

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1	MR. STEVEN ELIA: Me neither.
2	SPECIAL MASTER GARRIE: But they're MySQL
3	so
4	Does counsel know any idea why they're
5	identified as MySQL? Are they systems within MySQL? Or
6	are they MySQL systems?
7	Because . And
8	like is the same or are they unique?
9	MR. EUGENE ZARASHAW: My best guess would be
10	that It's a pretty
11	involved layer in addition to it. And I don't think it
12	uses MySQL anymore underneath.
13	On the other hand, we do run some other MySQL
14	clusters for different purposes, and while the software
15	may be about the same, the purposes are different. It's
16	machines with different data on them.
17	SPECIAL MASTER GARRIE: Okay.
18	MR. FALCONER: That's a far better answer than
19	you would have gotten from counsel, I just want to note
20	for the record.
21	SPECIAL MASTER GARRIE: Yeah. Noted.
22	
23	MR. EUGENE ZARASHAW: I don't know.
24	MR. STEVEN ELIA: That may be I don't know
25	if which is a system renamed itself, in which case

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1	you also might be better able to speak to that than me,
2	Eugene.
3	MR. EUGENE ZARASHAW: I honestly don't
4	remember what is anymore.
5	MR. STEVEN ELIA: It's very similar to TAO but
6	I think had fewer reliability guarantees perhaps.
7	MR. EUGENE ZARASHAW: Oh, is that oh, I do
8	recall what is now. That was the Memcache base TAO
9	without the MySQL part. So data went in and it might
10	just disappear at any time. It was meant for more
11	convenient caching than Memcache directly.
12	SPECIAL MASTER GARRIE: All right. So we can
13	junk that one.
14	All right.
15	MR. EUGENE ZARASHAW: Don't know.
16	MR. STEVEN ELIA: Me neither.
17	SPECIAL MASTER GARRIE: I don't even know how
18	to say the next one.
19	MR. EUGENE ZARASHAW: It's okay. It's a no
20	for the next three as well.
21	MR. STEVEN ELIA: Same.
22	SPECIAL MASTER GARRIE: Yeah. I don't even
23	know.
24	
25	MR. EUGENE ZARASHAW: Don't know what that one

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1	is.
2	The next one I know anything about is
3	
4	MR. STEVEN ELIA: Yeah. I don't know the ones
5	before
6	SPECIAL MASTER GARRIE:
7	MR. EUGENE ZARASHAW: Any time we bill a user
8	for something, whether we bill them for ads, for
9	example the most common cases, we charge them for
10	running ads. But also bill them for sending money to
11	their friend.
12	SPECIAL MASTER GARRIE: And then you also have
13	like they can buy photos or whatever else services.
14	Is that all run through
15	MR. EUGENE ZARASHAW: I don't know if you can
16	buy photos anymore. But, for example, there's
17	remittances, which you can send money to a friend and
18	that runs through
19	SPECIAL MASTER GARRIE: All right. Anything
20	you want to add there, Steven?
21	MR. STEVEN ELIA: Nope.
22	SPECIAL MASTER GARRIE: Okay.
23	
24	MR. EUGENE ZARASHAW: I don't know anything up
25	until 44.

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1	SPECIAL MASTER GARRIE: Okay. I'll take that.
2	How about you, Steven?
3	MR. STEVEN ELIA: Same.
4	SPECIAL MASTER GARRIE: MySQL.
5	MR. EUGENE ZARASHAW: Likely on there because
6	we probably have a set of MySQL machines somewhere that
7	are not covered by the other MySQL clusters listed.
8	SPECIAL MASTER GARRIE: That's what I'm a
9	little confused about. There are a bunch of MySQL
10	clusters here that seem so one of the things these
11	are systems that plaintiffs identified as storing user
12	data. But wouldn't MySQL be the like MySQL is
13	it's a database; right? It's not a
14	MR. EUGENE ZARASHAW: Right. And it's hard to
15	tell which instance of that database this is and what
16	would be in it.
17	MR. STEVEN ELIA: I would add that as Eugene
18	has previously said, these storage systems are often
19	implemented and organized here by use case. And so
20	those other MySQL instances listed here have their own
21	very specific use cases.
22	SPECIAL MASTER GARRIE: Where would we find
23	these use cases for these systems?
24	MR. EUGENE ZARASHAW: I recommend going the
25	other way and looking at what systems are actually big

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1	enough to serve a couple of two billion people.
2	Because if you're looking for user scale systems that
3	are storing that much data and having that much load, a
4	cluster of 50 machines is just not going to do it.
5	So getting some idea of the number of machines
6	involved might help you sift through these
7	SPECIAL MASTER GARRIE: Okay. That could be
8	very helpful. That is actually an excellent idea.
9	We'll give that some more thought.
10	Anything to 46, either one of you?
11	MR. EUGENE ZARASHAW: No. I'm lost until 50.
12	MR. STEVEN ELIA: Same.
13	SPECIAL MASTER GARRIE: We discussed
14	is something of interest to me.
15	What is well and the second se
16	MR. EUGENE ZARASHAW: I don't know.
17	MR. STEVEN ELIA: I don't either.
18	SPECIAL MASTER GARRIE: Does counsel for
19	Facebook have any idea why
20	this list?
21	MR. FALCONER: I don't want to speak off the
22	cuff on that, no. I mean, we can find out. We're happy
23	to find out as well, but I don't want you know,
24	if were to say anything inaccurate.
25	SPECIAL MASTER GARRIE: No. I got it.

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1	The reason I ask is because there's been
2	testimony from that there is no central or
3	testimony and statements from Facebook that there's no
4	central research repository.
5	When I read the words , it
6	strikes me as that may be a central research repository.
7	I could be wrong.
8	MR. EUGENE ZARASHAW: My guess on that one
9	and, again, this would only be a guess is this is a
10	database backing the research dot Facebook dot com site
11	containing the papers that we publish.
12	SPECIAL MASTER GARRIE: That's what I thought
13	likely as well.
14	MS. RING: Just to be clear, we don't know.
15	I mean, you asked, Special Master, counsel. There are
16	crazy names for things that make no sense and end up
17	having no relationship to what's actually in a data
18	source. I've seen that for over a decade. So we will
19	find out. But it would not be out of the ordinary for
20	it to have nothing at all to do with research.
21	SPECIAL MASTER GARRIE: I mean don't
22	have to do with
23	MS. RING: Exactly. Or I mean
24	SPECIAL MASTER GARRIE: My daughter
25	that was very excited when I told her I was going to

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1	talk about today.
2	So that
3	MR. EUGENE ZARASHAW: Of all the things I know
4	on that list.
5	SPECIAL MASTER GARRIE: Anything?
6	MR. STEVEN ELIA: I don't specifically know
7	52 PYMK But PYMK does stand for "people
8	you may know." It's the part of the product that
9	suggest friends to you. And so while I don't know what
10	data is in there, I would guess that it's in service of
11	that.
12	SPECIAL MASTER GARRIE: Any others?
13	MR. STEVEN ELIA: That's the last I recognize
14	anything about.
15	SPECIAL MASTER GARRIE: Got it.
16	And then below, there's a drawing and it was
17	stated that the social graph connects to 12 specific
18	systems.
19	One thing I did see that was removed from the
20	list, just for notification, was Hive.
21	But one thing I had a question about is do
22	you for these four for those 12 systems, right,
23	which I'm not quite sure I understand
24	Laser, Manifold, I think we can
25	probably get rid of Memcache, MySQL, again

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1	MR. EUGENE ZARASHAW: Apologies. I need to
2	update the record.
3	It is, that is the
4	messaging store.
5	SPECIAL MASTER GARRIE: Yeah.
6	TAO.
7	So all right. I think this was helpful.
8	I think we'll have to add one I'll get a more
9	specific set of requests for further clarification, as
10	well as the other things that I mentioned. I'll try to
11	get an order out, sort of clarifying that.
12	And I may tier the approach.
13	Does plaintiffs have any further questions
14	they'd like to ask?
15	MS. WEAVER: I think we're okay right now.
16	Thank you.
17	SPECIAL MASTER GARRIE: Facebook, any
18	questions you would like to ask?
19	MR. FALCONER: Not right now. No. Thank you
20	for the opportunity.
21	But I think what we'll do is, you know, once
22	we get the transcript, we'll go through it and if we
23	have any clarification that we think it would be helpful
24	to provide to the Special Master, we'll do that.
25	Probably just with a letter through the JAMS portal, you

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1	know, so everybody gets a copy. But I don't think
2	anything for this afternoon.
3	SPECIAL MASTER GARRIE: All right. We can go
4	off the record for one second.
5	(Pause in proceedings.)
6	SPECIAL MASTER GARRIE: All right. We'll go
7	back on the record.
8	All right. So rather than issuing a formal
9	order for the additional requested information, I'm
10	going to post via JAMS access my request for additional
11	information, and likely to request the scheduling of an
12	additional hearing. All hearing will be labeled as
13	confidential or actually highly confidential.
14	Any party that does want to attend this
15	hearing has to sign the protective order and receive
16	and notified accordingly.
17	In addition, I'm requesting that the
18	plaintiffs, if they come up with additional systems or
19	any particular systems they think would be of value, to
20	not let the five days that stand after the issuance of
21	my order, identify them as early as possible would be
22	much appreciated.
23	And otherwise I believe that is all. And I
24	thank the parties for making Mr. Zarashaw and Mr. Elia
25	available for today's bearing and it was extremely

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1	helpful and informative. I feel like we were able to
2	cut down the systems, at least from the list of 55
3	fairly substantially and develop clear parameters and
4	focus. So I do appreciate it.
5	And I'm going to move as fast as possible to
6	get to the bottom to resolve this issue.
7	MS. RING: Special Master Garrie, if I can
8	raise one more thing, and I don't know if we can resolve
9	it today but at least raise it and then think about how
10	to resolve it.
11	I think given the nature of the things that
12	are being discussed, we would like the hearings to be
13	sealed. Not just to people who are here to sign the
14	protective order, but to seal. I mean, this is very
15	detailed information about all of the companies'
16	internal systems, so
17	SPECIAL MASTER GARRIE: I'm fully with you.
18	So on the record, I'm fully in support of that, but that
19	is a motion Facebook has to bring to the Court for the
20	Court to issue a ruling.
21	MS. RING: Okay.
22	SPECIAL MASTER GARRIE: Accordingly, I do
23	agree with you that we are covering the inner workings
24	of Facebook systems and databases and technology and

systems.

25

	THORIE COLVED EVENIE
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1	But, again, that's a relief you would a
2	motion you would have to bring part before the judge or
3	the Court, and according to the local rules, follow the
4	respective procedures that underline that and the Court
5	will rule accordingly.
6	MS. RING: Understood. I just wanted to I
7	didn't want to leave the hearing without having
8	addressed that.
9	SPECIAL MASTER GARRIE: No. And that is why
10	today's hearing, there was such there was a lot of
11	interest and request to attend.
12	And I would also request the plaintiffs to
13	make sure and inform your and inform your fellow
14	plaintiffs' lawyers to channel everything through you
15	pursuant to the existing order.
16	MS. WEAVER: That has just been done.
17	SPECIAL MASTER GARRIE: Well, just to
18	communicate it accordingly, because now that judge
19	Well, we'll go off the record now. We're
20	done.
21	(Whereupon, proceedings adjourned at 5:28 p.m.)
22	000
22	

23

24

25

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1	STATE OF CALIFORNIA )			
	)			
2	COUNTY OF YOLO )			
3	000			
4	I, Katy E. Schmidt, a Certified Shorthand			
5	Reporter, do hereby certify:			
6	That said proceedings were taken before me at			
7	the time and place therein set forth and were taken down			
8	by me in shorthand and thereafter transcribed into			
9	typewriting under my direction and supervision;			
10	I further certify that I am neither counsel			
11	for, nor related to, any party to said proceedings, and			
12	am not in any way interested in the outcome thereof.			
13	In witness whereof, I have hereunto subscribed			
14	my name.			
15	Dated: February 18, 2022			
16				
17				
18				
19				
20	V Saharicht			
21	1 Significant			
22	Katy E. Schmidt			
	RPR, RMR, CRR, CSR 13096			
23				
24				
25				

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[zarashaw - zoom] Page 38

zarashaw's 8:12 107:13,25 108:6 108:22 109:5 138:18 110:10 111:18,22 zealous 7:9 112:4,22 113:3 115:2,9,20 116:3,8 117:3,17 118:10 **zone** 22:8 118:11,23 120:13 **zoom** 1:11 3:3,14 121:8,19,25 122:9 59:3 80:14 155:17 127:25 128:20,24 129:3,6,23 130:1,8 130:19,24 131:4 131:18 132:2,6,10 132:17,20 133:1,5 133:10,15,22 134:3 135:4 136:7 136:11 137:12,18 138:6,12,22 139:7 139:22 140:10,19 141:1,11 143:24 144:1,16 145:12 145:13 146:16,22 146:23 147:14 148:3,10,21,24 151:1,3,21 152:3,6 152:13,19 153:2,9 153:15,18,23 154:5,11,15,23 155:4,10,19,25 156:5,8,12,17,23 157:7,11,14,17,20 157:24 158:6,11 158:17,20,24 159:19 160:9,12 160:23 161:16,25 162:9,23 163:3,7 163:15,19,25 164:7,15,24 165:5 165:14,24 166:11 166:16 167:8 168:3 169:1 170:24

# Exhibit M



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## HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

March 7, 2022

## VIA JAMS ACCESS

Special Master Daniel B. Garrie DGarrie@jamsadr.com

Re: In re Facebook Consumer Privacy User Prcfile Litigation, JAMS Ref No. 1200058674

Dear Special Master Garrie,

Pursuant to the Hearing Order Regarding Plaintiffs' Motion To Compel Production of Plaintiff Data dated February 21, 2022, we submit this response on behalf of Facebook. We also thank the Special Master for granting an extension of our time to respond to allow us to provide responses that we believe would assist the Special Master in expediting resolution of the issue set forth by Judge Corley in her January 12, 2022 order: "[W]hat, if any, data from [systems other than DYI] should be produced consistent with Federal Rule of Civil Procedure 26(b)."

## I. USER DATA IN DYI

The Special Master's first two questions seek information about what user data is included in DYI. We welcome the opportunity to address that issue to correct and clarify statements made throughout these proceedings which seem to have created the impression that the DYI system is limited to the first category of "discoverable user data" identified by Judge Corley in Discovery Order No. 9. As explained below, the DYI system includes *all three categories* of data: (1) data collected from a user's on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, and (3) data inferred from a user's on or off-platform activity. So the issue is whether Facebook should produce *more data* in categories (1), (2), and (3) from systems other than DYI, which we understand is the focus of the Special Master's remaining questions.

Special Master Daniel B. Garrie March 7, 2022 Page 2

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**Question #1**. Engineer documentation for the process of generating the DYI file for a Facebook user, including data flow diagrams that explain how the data is retrieved, data schemas, and the individual fields for each data type in the schema.

The following DYI engineer documentation is attached as **Exhibit A**.

- Your Information Schema (DYI). This schema describes each of the categories and types of data included in DYI.
- Eng Guide: Adding to DYI Wiki. This document provides step-by-step instructions for engineers from product teams to add data to DYI, including instructions regarding where data should live in the DYI taxonomy and DYI schema fields.

**Question #2**. A statement clarifying whether information available via the DYI tool "includes user data provided by third parties to Facebook, e.g., data relating to users' off platform activity."

Yes, DYI includes user data provided by third parties to Facebook, which is the second category of "discoverable user data" identified by Judge Corley in Discovery Order No. 9. Since this data is stored as raw logs of event data in Facebook's data warehouse, Facebook had to build data pipelines from the data warehouse to production to (a) aggregate and group this event level data on a per user basis sorted in chronological order and (b) transform raw logs of event data in the data warehouse into a human readable information. This effort required complex and time-extensive engineering efforts.

This question from the Special Master highlights a broader factual issue, which we believe should be clarified to assist the Special Master in resolving the issue before him. In Discovery Order No. 9, Judge Corley identified the following categories of "discoverable user data": (1) data collected from a user's on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, and (3) data inferred from a user's on or off-platform activity. Plaintiffs repeatedly have asserted that DYI contains *only* data in category (1), citing a statement by Facebook's counsel during a status conference before Judge Corley.<sup>1</sup> In fact, the full exchange with Judge Corley makes clear that Facebook's counsel was explaining that the DYI tool does not contain *all* data in categories (1), (2) and (3), which is further demonstrated by the answer to this question confirming that DYI includes

(Cont'd on next page)

<sup>&</sup>lt;sup>1</sup> Pls' Sept. 28, 2020 Mot. Compel at 7, Dkt. 526; Pls' Oct. 18, 2021 Mot. Compel Production of Named Pls' Content And Information at 3.

Special Master Daniel B. Garrie March 7, 2022 Page 3

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data in category (2). Plaintiffs also have cited documents produced by Facebook that they claim prove Facebook's production is limited to *only* data in category (1), most notably, a document referring to "Native Data," "Appended Data," and "Behavioral Data." Again, this is incorrect. **Exhibit B** attaches the primary document Plaintiffs cite for this assertion and a table that describes how the Native, Appended, and Behavioral Data described in that document is either included in DYI or relates to features that were deprecated before this case was filed.

For completeness, we explain below the data in categories (1), (2), and (3) that are included in DYI, and attach as **Exhibit C** summaries of the data that has been produced for each of the named plaintiffs.

Category (1): Data collected from on-platform activity. DYI includes data provided by users and data observed by Facebook on the platform.

*User-provided data* includes profile data, user-generated content (e.g., posts, videos, photos, comments, stories), message content, friends, location check-ins, linked accounts in the Facebook family of products, and language choices.

Observed data includes clicks, profiles, Pages, Groups, and Events a user has visited, usage data, device data, networks and connections, data about user's activity level, advertisers with which the user has interacted, pages (user pages, pages a user liked or recommended, pages a user follows, pages a user has unfollowed), IP address when sending a message, users that a user has chosen to "see less" or "see first" in News Feed, time spent watching from a page, people whose profile a user has visited, last location, last active time, whether a user viewed someone's birthday story, people a user blocked on Messenger, page notifications, pages a user recommended, time zone, email address verification, Marketplace notifications, and interactions.

Category (2): Data collected from off-platform activity. DYI includes information provided to Facebook by third-party advertisers, app developers, and publishers about user interactions.

User interactions are things like opening a third-party developer app that integrates Facebook business tools, and visiting websites that integrate the Facebook business tools providing information about the user viewing content, searching for items, adding an item to a shopping cart, or making a purchase. Third parties share this off-platform activity with Facebook using "business tools," which are technologies designed to help website owners

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 $<sup>^{2}</sup>$  Pls' Sept. 28, 2020 Mot. Compel at 8, Dkt. 526.

Special Master Daniel B. Garrie March 7, 2022 Page 4

## HIGHLY CONFIDENTIAL—ATORNEYS EYES ONLY

and publishers, app developers, advertisers, and others, integrate with Facebook, understand and measure their products and services, and better reach and serve people who use or might be interested in their products and services. Business tools include Facebook Pixel, Facebook SDK, Conversions API, Offline Conversions, and the App Events API. Facebook also receives impression data through Facebook Social Plugins (e.g., Like and Share buttons) and Facebook Login.

Facebook also receives contact lists with user information uploaded by advertisers for the purpose of serving ads to those users through what are referred to as custom audiences. These lists include hashed information about users (e.g., email addresses, phone numbers) that is used to try to match people on the list with Facebook user accounts; matched users are placed in the custom audience. This hashed information is discarded after the matching process.

Category (3): Data inferred from a user's on or off-platform activity. DYI includes data that is derived from a user's on or off-platform activity.

DYI includes information regarding ads interests; music recommendations based on genres of music a user has interacted with on Facebook; "your topics," which is a collection of topics determined by a user's activity on Facebook that is used to create recommendations for users in different areas of Facebook such as News Feed, News, and Watch; primary location; primary public location; friend peer group; creator badges (including labels like "visual storyteller" or "conversation starter" based on activity in Groups); time zone; language preferences (including preferred language for videos, languages you may know, preferred language); and mobile service provider and country code.

**Plaintiffs' DYI Data**. Summaries of the DYI files for each named plaintiff showing that they include all three categories of "discoverable user data" identified in Discovery Order No. 9 are attached as **Exhibit C**.

## II. OTHER USER DATA AND SYSTEMS

The Special Master's remaining questions focus on understanding what other systems contain user data and, as Judge Corley stated the issue, "what, if any, additional data should be produced consistent with Federal Rule of Civil Procedure 26(b)." To be sure, the DYI file does not include all data related to users, but that does not mean that production of that data is consistent with Rule 26. For example, as explained above, DYI includes data received from third parties regarding a user's off-platform activity on apps and websites, such as viewing content and adding an item to a shopping cart, but does not include data identifying

Special Master Daniel B. Garrie March 7, 2022 Page 5

## HIGHLY CONFIDENTIAL—ATORNEYS EYES ONLY

the specific content that was viewed or the item that was added to a cart for reasons that engineers will be prepared to explain at the hearing.

**Question #3:** A statement identifying systems that coordinate and schedule jobs that run against the Hive (a process that accesses table data in the Hive and aggregates user data to produce a meaningful data set). For each job that may involve user data, Facebook is to describe the data extracted in the job and where the job saves the data.

The majority of batch data processing of Hive data at Meta is handled by a system called Dataswarm, which is described below. The remaining minority of batch data processing is coordinated by FBLearner, which is a similar system derived from Dataswarm.

Dataswarm works by having employees (1) define atoms of computation called tasks and then having employees (2) explicitly state the dependency relationships between these tasks so that the system can initiate a task's computations after the preceding tasks have completed their execution. These tasks are treated as black boxes: the system knows nothing about what the task does beyond the rough type of computation performed. For any given task, Dataswarm does not know what data is used as inputs to the computations it orchestrates or what data is produced as outputs by these computations.

Facebook's current approach for identifying what data is consumed as inputs by a job and is generated as outputs by that job is a time-consuming manual process. Because Dataswarm performs millions of tasks each day, it is not possible to complete this manual process for all Dataswarm tasks. To respond to the Special Master's request, Facebook completed this manual process for a sample of 10 tasks run in Dataswarm on February 15, 2022. This sample is attached **Exhibit D**. Approximately five million Dataswarm tasks were run on February 15.

**Question #4**: A statement identifying the internal identifiers Facebook uses to track users across the Facebook platform, including a description of which Facebook systems use each identifier, how each system uses each identifier, and how Facebook maps identifiers to users.

Facebook primarily uses four types of internal identifiers for user data: (1) a user identifier (UserID), (2) Replacement ID, (3) Separable ID, and (4) App Scoped Identifiers. Each is described in more detail below.

**UserID**. Facebook uses an industry-wide technique called pseudonymization to represent users on the Facebook platform. In essence Facebook creates a canonical unique

Special Master Daniel B. Garrie March 7, 2022 Page 6

## HIGHLY CONFIDENTIAL—ATORNEYS EYES ONLY

identifier that encapsulates information about the user (such as First Name, Last Name, email, phone numbers, etc). The encapsulation can be accessed by an identifier called a user identifier (or UserID); this is similar to a row being stored in a database table with the primary key being the userid and information of the user being values in the other columns. UserIDs are unique in Facebook's systems, such that two users cannot have the same UserID, and they are not recycled, meaning even after a user deletes their account, no other user can have the same UserID. The User ID is the canonical identifier to represent a Facebook user and is used in nearly all Facebook systems.

**Replacement ID (RID)**. The RID is an identifier that supports Facebook's deletion practices by irreversibly disassociating data from a user. Every user is assigned an RID for the lifetime of their account. In data systems that do not support deletion (e.g. Hive), any user data retained for more than 90 days can only be retained with an RID. When a user deletes her account, Facebook deletes the record connecting the UserID to the RID so that data stored with that RID can no longer be connected to that user. Like the UserID, the RID represents a single user. Two users cannot have the same RID, and RIDs are not recycled.

Separable ID (SID). The SID is similar to the RID, but allows Facebook to permanently disassociate Off Facebook Activity data from a user. Data Facebook receives from third parties about a user is associated with an SID (rather than UserID), and Facebook maintains a separate mapping between SIDs and UserIDs that can be accessed when data is processed. Through Facebook's Off Facebook Activity tool, users are able to clear their Off Facebook Activity. When a user does this, Facebook removes the mapping between the users' SID and UserID, which irreversibly dissociates the data stored with an SID from the user. Facebook then generates a new SID to be associated with the user's account moving forward.

More information about SID's is available at this link: <a href="https://engineering.fb.com/2019/08/20/data-infrastructure/off-facebook-activity/">https://engineering.fb.com/2019/08/20/data-infrastructure/off-facebook-activity/</a>

**App-Scoped ID (ASID)**. The ASID is an identifier that is sent to the third-party developer when a Facebook user has chosen to use the Facebook Login product to login to the services of the third-party developer. The App-Scoped ID also serves as a privacy protective identifier that Facebook created with the purpose of preventing different third-party apps from sharing data or amassing profiles of users across apps. This is why the App Scoped ID is created on a per-user per-app basis, such that different third-party developers do not receive the same identifier for the same Facebook user.

Special Master Daniel B. Garrie March 7, 2022 Page 7

## HIGHLY CONFIDENTIAL—ATORNEYS EYES ONLY

**Question #5**: A statement identifying the sources from which Graph API pulls user data, including a high-level description of each source and the engineers that own each source.

**TAO**. The Facebook production infrastructure is centralized around a distributed data store for the social graph, called TAO (The Associations and Objects), which is the primary source from which Graph API pulls data (including user data). TAO is a high-performance service for storing, caching, and querying the graph for nodes and associations, by providing a clean interface for internal and external developers to integrate into the social graph, abstracting away many of the complexities of developing and maintaining a data storage at scale.

- For more information about TAO: <a href="https://engineering.fb.com/2013/06/25/core-data/tao-the-power-of-the-graph/">https://engineering.fb.com/2013/06/25/core-data/tao-the-power-of-the-graph/</a>
- Technical Point of Contact:

**Technical Points of Contact:** 

TAO provides a layer of abstraction to describe objects and relations through EntSchema and Node. The underlying technology that is used to store these data models is a collection of technologies such as MySQL, Manifold, ZippyDB/Akkio, Memcache, and Laser. In limited cases, and for specific purposes, other systems may access these systems directly.

**MySQL:** MySQL is TAO's backbone. It provides transactional and availability properties to columnar data. For example, a user's comment can be stored in a MySQL database as a row in a table, where the comment id is the primary key and the comment is a text field. As another example, the fact that someone liked a comment can be represented by an association with the type like from the comment id and the user id, this could be represented as 3 columns in the table, with comment id, user id, and type of reaction.

• Technical Point of Contact:

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**ZippyDB**/**Akkio**: ZippyDB is a persistent key-value storage service that provides reliable, scalable, geo-replicated storage for high throughput applications. ZippyDB provides very efficient key value lookups, faster than MySQL but are not transactional in nature. Akkio operates on top of storage services like Zippy. Akkio splits the data sets into units with strong locality, which can then be geographically placed close to where they are most likely to be accessed.

• For more information about ZippyDB/Akkio: <a href="https://engineering.fb.com/2021/08/06/core-data/zippydb/">https://engineering.fb.com/2021/08/06/core-data/zippydb/</a> (ZippyDB); <a href="https://engineering.fb.com/2018/10/08/core-data/akkio/">https://engineering.fb.com/2018/10/08/core-data/akkio/</a> (Akkio).



**Memcache:** Memcache provides a cache to the TAO service, the cache ensures that queries that have recently run are available quickly through the cache, as the response time of a cache are orders of magnitude quicker than a lookup in a MySQL database.

Technical Point of Contact:

Laser: Laser is an indexing service that provides low-latency (typically a few milliseconds) read access to specific sets of Data Warehouse data. Data in the Data Warehouse is not indexed on a per user basis, but some Facebook products need to surface the calculations that the product performs to the production systems so a GraphAPI can request the data. Laser is only used to support first-party (i.e. Meta) products.

• Technical Point of Contact:

There are other technologies that keep TAO operational that ensure the service is performing at a high-performance.

following entities: Microsoft, and
------------------------------------

Facebook will submit via email to the Special Master and Plaintiffs contracts relating to user data with Microsoft, and that have been produced in this case. Facebook will separately submit to the Special Master contracts with these entities that have not been produced to date in camera, to provide Facebook an opportunity to fully analyze

Special Master Daniel B. Garrie March 7, 2022 Page 9

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and comply with any notice provisions in these agreements. Once Facebook has completed this analysis and complied with any notice provisions, Facebook will produce the contracts to Plaintiffs, consistent with Facebook's agreement to search for additional contracts Plaintiffs recently requested.

Facebook notes that Meta Platforms, Inc., Microsoft, and are some of the largest technology companies in the world. These entities are parties to a very large number of agreements, the vast majority of which are confidential business agreements and outside the scope of this litigation. Should Facebook identify additional agreements with these entities that are responsive to the Special Master's request, Facebook will provide them.

Question #7: Update list of 149 systems identified in the Declaration of David Pope.

In discussing the topics and questions to be addressed during the hearing on Wednesday, March 9, 2002, the engineers who will be attending the hearing have explained to counsel that the list of 149 systems and categorization discussed during the hearing with David Pope on January 14, 2002, are not an effective way of assisting the Special Master in understanding the user data that exists in Facebook systems. Instead, they approach this question from the perspective of a Facebook engineer building product experiences or conducting data analysis who think of user data in terms of production systems and the data warehouse. As these engineers will explain at the hearing,

Sincerely,

Rosemarie T. Ring

Rosemen Ring

# Exhibit N

1	UNITED STATES DISTRICT COURT
2	NORTHERN DISTRICT OF CALIFORNIA
3	
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5	IN RE: ) MDL No. 2843
	)
6	FACEBOOK, INC. CONSUMER ) Case No. 18-md-02843-
	PRIVACY USER PROFILE ) VC-JSC
7	LITIGATION )
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	ATTORNEYS' EYES ONLY
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	SPECIAL MASTER: DANIEL GARRIE
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13	REMOTE HEARING
14	(Via Zoom Videoconference)
15	Wednesday, March 9, 2022
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18	REPORTED BY: Michelle Milan Fulmer
	CSR No. 6942, RPR, CRR, CRC
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	Page 1

1	UNITED STATES DISTRICT COURT
2	NORTHERN DISTRICT OF CALIFORNIA
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5	IN RE: ) MDL No. 2843
	)
6	FACEBOOK, INC. CONSUMER ) Case No. 18-md-02843-
	PRIVACY USER PROFILE ) VC-JSC
7	LITIGATION )
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10	Remote hearing taken before Michelle Milan
11	Fulmer, a Certified Shorthand Reporter for the
12	State of California, commencing at 10:20 a.m.,
13	Pacific Standard Time, Wednesday, March 9, 2022.
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	Page 2
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1	Wednesday, March 9, 2022
2	10:20 a.m 2:28 p.m.
3	***
4	MR. GARRIE: We will go on the record.
5	We will take breaks for the court reporter's sake
6	every 45 minutes to an hour basis. I lose track of
7	time, Michelle. So you need to tell me because I
8	get engrossed in something and time becomes
9	irrelevant. So if you would just kindly remind me.
10	It's not that I don't want to give anybody a break.
11	It's just that I get I lose track of time. So I
12	apologize.
13	So on the record, let's just test
14	everybody's audio for the record.
15	Mr. Patel, just say a couple words.
16	MR. PATEL: Hello, everybody.
17	MR. GARRIE: Court Reporter, we're good?
18	THE COURT REPORTER: Yes.
19	MR. GARRIE: Okay. Mr. Zarashaw.
20	MR. ZARASHAW: Good morning.
21	MR. GARRIE: We're good.
22	Mr. Mitchell.
23	MR. MITCHELL: Good morning.
24	MR. GARRIE: Mr. Clark.
25	MR. CLARK: Good morning.
	Page 5

1 MR. GARRIE: All right. This is Special Master Daniel Garrie. 2 The purpose of today's hearing is to 3 discuss, and only today, hopefully no further 4 5 hearings are necessary, regarding named plaintiff data that was the order that was issued and 6 7 attempting to identify and figure out what are the appropriate scope of data within the discoverable 8 9 data pursuant to the court's order relating to the named plaintiff data that is to be produced in this 10 11 litigation. 12 Today's format is I will largely be asking 13 questions of the engineers. I have invited counsel for Facebook to object if I go into anything of a 14 15 privileged nature as well as instructed the 16 witnesses to ask if they have any questions, to ask any clarifying questions; if they think something 17 they're saying may be privileged, to ask to speak to 18 counsel. We have breakout rooms. We'll go 19 accordingly and have those conversations. 20 With all of that said, I first want to just 21 officially on the record recognize and thank 22 23 Facebook for accommodating an accelerated timeline for a very complex set of problems. I don't want 24 25 to -- I realize litigation has been going on for Page 6

1	some time. I realize there's a lot of history here,
2	but I also recognize that two weeks isn't a lot of
3	time to answer all of the questions, or even a month
4	to answer in detail the technical questions that
5	I've asked.
6	So the answers and data that has been
7	provided is very helpful. I want to thank Facebook
8	for making that effort, making the engineering
9	resources available. It's certainly helping
10	expedite things and move things along and I wanted
11	to officially recognize that on the record.
12	With that said, counsel will not be asking
13	questions. If there is a burning desire for counsel
14	to ask a question, you can raise your hand and I
15	will, when I'm done with my questions, invite
16	questions accordingly and, if I think they're
17	appropriate, then we will ask them. Nobody will ask
18	the engineers questions, but me.
19	I did invite counsel for plaintiffs to
20	provide questions and material and I reviewed them.
21	Some of them I think are relevant. Some I do not.
22	I will use them accordingly. I do want to thank
23	plaintiffs as well for going out of their way to
24	help identify appropriate questions as it relates to

Page 7

this issue we have before us now.

25

1	With all of that said, I'm going to jump
2	right in to lay out the format of how I'm
3	MS. WEAVER: I apologize for interrupting,
4	but do you want to swear in the witnesses?
5	MR. GARRIE: I will. Thank you for
6	reminding me. I often forget. There's usually a
7	court reporter and I'm not the one usually doing it.
8	So there's usually
9	Would the court reporter swear in? I guess
10	I don't know if we can group swear in, but whatever
11	is comfortable, however the court reporter thinks
12	best, swear in the witnesses.
13	THE COURT REPORTER: Okay. And,
14	Mr. Garrie, are you going to be asking questions
15	of Mr. Patel, and then the next time Mr. Clark,
16	et cetera?
17	MR. GARRIE: Oh, no.
18	THE COURT REPORTER: Oh, okay.
19	MR. GARRIE: It's going to be a
2 0	free-for-all. I'm not sure who knows what. So I
21	don't want to they know way more about Facebook
22	and the engineering systems than I ever will. So I
23	don't know which one of the four will be best
24	situated. So I'll direct the question to who I
25	believe and they can go around and say, "I have

something to add."
THE COURT REPORTER: So, Mr. Zarashaw, will
you raise your right hand to be sworn?
EUGENE ZARASHAW,
called as a witness, having been first duly sworn by
the Certified Shorthand Reporter, was examined and
testified as follows:
THE COURT REPORTER: Mr. Patel, will you
raise your right hand to be sworn?
MAYUR PATEL,
called as a witness, having been first duly sworn by
the Certified Shorthand Reporter, was examined and
testified as follows:
THE COURT REPORTER: Mr. Mitchell, will you
raise your right hand to be sworn?
BEN MITCHELL,
called as a witness, having been first duly sworn by
the Certified Shorthand Reporter, was examined and
testified as follows:
Page 9

1	THE COURT REPORTER: Mr. Clark, will you
2	raise your right hand to be sworn?
3	I think he froze.
4	MR. GARRIE: When Mr. Mitchell rejoins, the
5	JAMS Mr. Mitchell is here.
6	When Mr. Clark rejoins thank you,
7	Mr. Mitchell the JAMS moderator hopefully is
8	still here and will here he is. I'm admitting
9	him now.
LO	MS. RING: May I say, Special Master
L1	Garrie, I just want to be clear, I guess, in
L2	response to the free-for-all comment.
L3	These witnesses have been prepared to
L4	address specific topics. So I just want everyone to
L 5	be aware of that and I want to give them comfort
L6	that they're not going to be expected to guess to
L 7	things that they don't know. Right.
L 8	MR. GARRIE: Well, I was going to to
L 9	your point, Counsel Ring, what I was going to say is
20	if any of the engineers it's completely okay not
21	to know something. You guys have millions of lines
22	of software code and areas of specialty and teams
23	you lead and it's completely acceptable to say, "I
24	don't know." I don't expect you to know everybody.
25	I just don't know if you worked on in the
	Page 10

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1
     past in certain areas or something else. But please
     say -- if you don't know something and it's
 2
 3
     completely unacceptable to answer, just say, "I
     don't know." I don't expect you to know the answers
 4
 5
     to everything and we'll go through it like that.
     Just if you have anything to add to a particular
 6
 7
     question, then, you know, you'll add; and if not,
     you won't.
8
9
              Is that all right with you, Counsel Ring?
                               Thank you, Special Master
10
              MS. RING: Yes.
11
     Garrie. I just wanted to be -- you know, I want
12
     them to feel comfortable and they've been -- we've
13
     been talking to them for a long time and they're
     prepared to answer your questions. I just wanted to
14
     be clear about what we've prepared them for and
15
16
     discussed with them.
17
              MR. GARRIE: Oh, 100 percent.
     That's my expectation. I just -- they're the
18
     engineers and I'm not. So that's why I just sort
19
20
     of give them. And project mana- -- at some point
     we're engineers, maybe more or less than. I don't
21
22
     know.
23
              But the point is, Mr. Clark, if we can just
24
     quickly swear you in, and then we can kick it all
     off.
25
```

1	MR. CLARK: We had a power outage. So I'm
2	on my phone.
3	THE COURT REPORTER: Okay. Can you raise
4	your right hand to be sworn, Mr. Clark?
5	
6	MIKE CLARK,
7	called as a witness, having been first duly sworn by
8	the Certified Shorthand Reporter, was examined and
9	testified as follows:
10	
11	MR. GARRIE: Okay. We've gone through all
12	the formalities.
13	With that said, before we jump into
14	everything, the way I'm going to approach today is
15	I've presented a series of questions. I'm going to
16	go through the questions and I've read the responses
17	and I have additional clarifying information I'm
18	looking for regarding the responses to your
19	questions. So if you have anything else you
20	So what I'm going to do is I want to ask
21	my, at least, one question, and then if you guys
22	want to add any further clarifications or any other
23	statements or other things, I'm going to welcome
24	them. I do want to appreciate thank you for
25	categorizing them.

1	And for the record, Counsel Ring, I also
2	agree and recognize that a different way of
3	approaching the data than looking at all 149 systems
4	is definitely the way to go, but I wanted to finish
5	off the initial task so we have a complete record
6	for that, but I do fully agree with you and that's
7	what I'm hoping we can start and finish today.
8	With that said, I'm going to read out just
9	so we have a clear record of what I'm talking about
10	so there's no ambiguity.
11	It says, "Accordingly, the court rules,"
12	this is Judge Corley, "rules the discoverable user
13	data at issue includes (1) data collected from a
14	user's on-platform activity, (2) data obtained from
15	third parties regarding a user's off-platform
16	activities, and (3) data inferred from a user's on
17	or off-platform activity."
18	So I just so when I say in the letters
19	and the back and forth, there's one, two, and three
20	constantly going back and forth, that's when we say
21	one, two, or three what we're referring to so
22	there's no ambiguity here.
23	With that said, I think we'll kick off with
24	the first question and the first question really was
25	talking about the DYI file and how it's generated

Page 13

1	and the information, you know, and the answers, but
2	what I saw sorry. I'm just looking at my
3	outline. Actually I did quite a bit of homework
4	myself. What I saw and in my review of it and I
5	had a chance to read it. I luckily don't need a lot
6	of sleep. But I had a chance to read it and, from
7	what I could tell, it describes how data is tagged
8	and to be included in the DYI export, but not how
9	data is extracted by the DYI file generation
10	process.
11	So, you know, what I'm trying to understand
12	is where the data comes from and how it's filtered
13	to only include tagged fields and what other fields
14	it is to exclude.
15	So in Exhibit A, the access, in the
16	engineering guide I think it's Page 29. Let me make
17	sure we're talking apples to apples. Page 29.
18	So on Page 29 in there, the engineering guide,
19	there's this thing called Access your Information
20	and can someone explain okay, I think I know
21	who to ask, but I'll keep it broad for now
22	you know, explain how Access your Information is
23	different from DYI?
24	Mr. Clark, we'll start with you.
25	MR. CLARK: Yeah. Of the transparency

1	products that we have, a DYI is allowing you to
2	download your file. AYI is meant to be an
3	interactive version that is live on the site and not
4	downloading every single bit of information that's
5	included in the DYI file. And so its function is
6	slightly different in that it is set and populated
7	with a similar, but not as a complete cut of data.
8	MR. GARRIE: DYI does AYI data
9	I guess a way of thinking about it, is AYI
LO	small and then DYI contains all the AYI data?
L1	MR. CLARK: Plus more.
L2	MR. GARRIE: Well, yeah. So AYI and then,
L3	bigger, all of DYI has AYI plus whatever else.
L4	MR. CLARK: That is correct.
L 5	MR. GARRIE: Okay. So then the AYI is
L 6	just how is that is that working to do what?
L 7	You said it was real-time data that they're looking
L 8	at or
L 9	MR. CLARK: Well, DYI is somewhat real
20	time, but it takes time to cue up. I've got a long
21	Facebook usage history, and so mine takes the better
22	part of a couple days and is many gigs in size even
23	with low-resolution photos.
24	AYI allows me to click through that
25	information live on the site and be able to look at
	Page 15

1	that content on the Facebook site.
2	MR. GARRIE: It's basically re-skimming the
3	data effectively.
4	MR. CLARK: Correct. And not putting it in
5	a downloadable format.
6	MR. GARRIE: Yeah. Okay.
7	So then the reference is
9	I think, what is the Activity Log? I
LO	didn't see the definition of what an Activity Log is
L1	and I was hoping you could clarify what is the
L2	Activity Log.
L3	MR. CLARK: Sure. There's a very in
L4	fact, they're very similar and some of the things
L 5	that you click on in AYI actually
	Activity Log is meant
L 7	to be much more like the Facebook site itself as
L 8	opposed to sitting outside of the site.
L 9	When you interact with the content in
20	Activity Log, you can in some cases delete it or
21	archive it right from the Activity Log. It is a
22	, but it is meant to
23	be the logging of your interactions and the content
24	that you've uploaded and those specific things
25	inside of Activity Log that you can interact with
	Page 16

1	more so than you can in AYI. AYI is meant to read
2	only. Activity Log I can actually interact with the
3	content.
4	MR. GARRIE: Okay. I'm just writing it
5	down.
6	So then where is the Activity Log data
7	itself stored?
8	MR. CLARK: In
9	MR. GARRIE: So I think you gave me every
10	single system you have.
11	When you say you're
12	referring to a particular one? I know it's
13	aggregated, backed up, and distributed.
14	So when you say can we
15	define what is a great you have
	becomes this very large list of things which
17	I don't really need to touch on as long as it's the
18	same and there's nothing new in the
	if that makes sense.
20	MR. CLARK: Yeah. I have a response up on
21	my screen; but since I can't see it, I'm going to
22	defer to Mayur to help answer and clarify, Mr. Patel
23	to help answer and clarify your question on, like,
24	where some of that content may be.
25	MR. PATEL: All right. So just to answer
	Page 17

the question, to understand the question, you're
asking where does Activity Log data reside, in which
specific data store?
MR. GARRIE: Yeah. Like where is it
actually stored?
MR. PATEL: Yeah. So it's stored in if
you have the 149, it's stored in
order to make it effective to produce the results in
real time, we need to
and so we have a specialized store
called
MR. GARRIE: Okay. And so that's a
dedicated system, I assume, just
MR. PATEL: Correct. Just for this
purpose.
MR. GARRIE: Do you guys differentiate
between those? I notice in the answer there's a
distinction between a couple milliseconds, a
millisecond and other things, and that makes a
little more sense.
Okay. So then how is the Activity Log data
used by is Activity Log data used by
beyond the AYI, DYI piece?
MR. PATEL:
MR. GARRIE: Oh, this is an important
Page 18

1	preface to tee it off.
2	Generally speaking, I'm not looking for
3	absolute. 95 percent is sufficient. Just tell me
4	it's not absolute, but more likely than not. Right?
5	I realize that there's a very loose definition of
6	the control of some that underlie some of the
7	systems and who can access and what gets put in
8	them.
9	MS. RING: Special Master Garrie, if I may
10	on that topic.
11	I appreciate you saying that and just,
12	again, for the comfort of the people who are here
13	testifying today and so that they can be as helpful
14	to you as possible, Mr. Patel isn't responsible for
15	generating the Activity Log. So when he says, you
16	know, he's , I
17	just want him to feel comfortable to make the point
18	I think you're trying to make, which is he doesn't
19	know, but he's trying to tell you, you know, his
20	understanding.
21	MR. GARRIE: Which is a lot better than
22	mine.
23	MS. RING: What?
24	MR. GARRIE: Which is a lot better than
25	mine.

1	MS. RING: Oh, your understanding?
2	MR. GARRIE: Yeah.
3	MS. RING: Yeah. I know the feeling.
4	Okay. Thank you.
5	MR. GARRIE: I mean, he knew it's in
6	So he's ahead of me.
7	All right. So then I read the engineering
8	process for adding data to the DYI, AYI, and
9	Activity Log. I notice that there's a very
10	prescriptive process, which there's quite a bit of
11	thought.
12	But how do engineers determine if they need
13	to add to DYI, AYI, and Activity Log; right? How
14	does an engineer actually say, "Stick it here, not
15	here. Put it there"?
16	MR. CLARK: I'll start. If anybody has
17	more to add, they can.
18	That's, first of all, part of having our
19	broad privacy program that we have. Every employee
20	and every engineer is trained in privacy and have to
21	recertify on a regular basis. Every product they
22	build must go through a privacy review or a review
23	for a variety of things.
24	As part of both that privacy program and
25	the privacy review process is checks and evaluations

Page 20

on data that's being added and where and how it 1 should be mapped. And what we provided to you is as 2 3 products are built or as products are being developed, the technical process for an engineer to 4 5 actually add it to those product surfaces or to 6 those product areas, AYI, Activity Log, and DYI. 7 MR. GARRIE: So then is it the engineer who makes the determinations of what goes in there? 8 9 MR. CLARK: 15 MR. GARRIE: That's why I was wondering. 16 Right. 17 How does an engineer know if it's a duplicative cookie or not a duplicative cookie 18 unless they are intimately familiar with the entire 19 data structure of DYI, AYI? So I thought there may 20 21 be a process for the engineer to determine or make that determination. 22 23 MR. CLARK: And in the pages that Page 21

1	you have for the types of
2	MR. GARRIE: Yeah. Yeah.
3	So that gives them the framework. I'm just
4	wondering they don't know the file; right? So at
5	some point the engineering team or the DYI group has
6	got to be consulted, I assume, because you don't
7	want to load the file with duplicative data.
8	MR. CLARK: Correct.
9	MR. GARRIE: Are there any other reasons
10	why an engineer wouldn't include data in the DYI
11	file then or the Activity Log?
12	MR. CLARK: You know, there are a couple of
13	examples.
14	I think one example might be that the data,
15	for instance, being used may not be may not
16	actually include the user or like actually know that
17	it belongs to the user. I think those are two
18	different areas. The data may not be associated
19	with that user. Like, for instance, somebody takes
20	a picture of you and I and you upload it and never
21	tag me. There's a photo of me, but I don't know
22	that that photo of me ever exists and so no one does
23	since it was never tagged. And, therefore, that
24	wouldn't be.
25	The data may not be human readable. There
	Page 22

1	might not actually be something to show.
2	MR. GARRIE: When you say human readable,
3	all words are readable to me. So I always find
4	human readable to be this ephemeral concept.
5	So for an engineer, human readable is
6	something lawyers will never be able to read. Like
7	you give a lawyer a for loop, a while loop, a
8	do-while, variables, class files, whatever,
9	that's I've had multiple lawyers tell me that is
LO	unreadable.
L1	So how do you define human? When you're
L2	saying human readable, what are we saying, like?
L3	MR. CLARK: Maybe a good concrete example
L4	might be like as things travel between multiple
L5	models or multiple classifiers, the model itself may
L6	attach a short-term or a transient a transient
L7	tag from an associative perspective that, you know,
L8	is still tied, but ultimately isn't even meaningful
L9	to the engineer that built the model.
20	MR. GARRIE: Is that the same for all data,
21	mobile, everything, you know, TVs? I mean, you guys
22	have all sorts of hardware; right? You have picture
23	frames and TVs and all of this.
24	MR. CLARK: I don't think TVs, for the
25	record.

Page 23

1	MR. GARRIE: Well, it's accessible on a TV,
2	I believe.
3	MR. CLARK: Sure.
4	MR. GARRIE: I guess you might treat that
5	just as a normal screen with a web API. I don't
6	know how you treat it. But like you have the
7	frames, right, or you have a mobile device. Right.
8	So there are 513 different versions of Android that
9	are currently supported just in North America. So,
10	I mean, everybody may have a different flavor.
11	So how are we defining machine readable,
12	like? So are we saying, like, is a hash value
13	non-mach is that hash value, as an example, like
14	you hash something, is that non-readable?
15	MR. PATEL: It depends what you're hashing.
16	Sorry.
17	MR. CLARK: No. Please, Mr. Patel.
18	MR. GARRIE: So I'm just trying to figure
19	it out because is it more the way the data is used
20	or is it because a hash value is machine readable or
21	does it include or hashes hashes would be
22	non-DYI or DYI or how does that work?
23	MR. PATEL: So a hash of a picture, for
24	example, photo DNA or something like that, we
25	provide the original content that you uploaded to

1	Facebook. And so, therefore, any hash is a
2	derivative of it in that sense.
3	MR. GARRIE: But there's metadata embedded
4	in the photo. Like photos have you know, can
5	have GPS. They can have depending on how fancy
6	your camera is, it can have all sorts of things in
7	it. But do you include that then in the DYI file?
8	MR. PATEL: I do not believe
9	MR. GARRIE: The hash of a photo.
10	MR. PATEL: The hash of the photo we do not
11	include in DYI. The original photo we do. The
12	original photo also could be resized. Like if you
13	upload a 16 meg photo, you know, we may not retain
14	the 16 meg photo. We may retain a smaller version
15	of it.
16	MR. GARRIE: I assume you'd resize it and
17	put it in your blob and drop it into your photo
18	system and archive it.
19	MR. PATEL: Correct.
20	MR. GARRIE: Yeah. So that's what I'm
21	trying to figure out from the engineering side of
22	the house what
23	I guess what I'm really trying to figure
24	out is how things get in the DYI and not in the DYI,
25	but I think so then

1	MR. CLARK: There are a few more things
2	that don't go in DYI. I think there's there's
3	some classifications both from like
5	For instance, if we believe you're
	might be one example
8	of that.
9	MR. PATEL: And just going back to the
10	hashing question.
11	The photo that you upload, when we provide
12	that back to you, the hash of it, and especially
13	photo DNA, should produce the same hash value. So
14	it is effectively like, you can generate your own
15	photo DNA hash from it.
16	MR. GARRIE: As long as you don't use as
17	long as you embed data. It just depends. Yes. I
18	agree. I do forensics work on photos.
19	MR. PATEL: Oh, okay.
20	MR. GARRIE: Perfect.
21	MR. PATEL: Yeah. I believe we strip the
22	excess information if we do hash.
23	MR. GARRIE: So, yes. I believe you are
24	correct having done forensics on Facebook photos
25	myself.

1	Okay. So then I guess my question is, so
2	when I read over the document, is there an
3	independent from the engineer review of whether the
4	data point is or is not added to the DYI, AYI or
5	Activity Log?
6	MR. CLARK:
8	MR. GARRIE: And that's independent of the
9	engineer?
10	MR. CLARK:
11	MR. GARRIE: All right. That makes sense.
12	All right.
13	And then a, I
14	notice that's the instrument that's needed to add
15	data to the DYI; right? So how does the
	work itself? Because that wasn't in
17	there.
18	MR. CLARK: For the sake of clarity, that
19	is the same team as the <b>Section 1</b> The <b>Section</b>
20	stands for and that is the prior
21	name of the
22	MR. GARRIE: is the
23	same as the one in the document?
24	MR. CLARK: Correct.
25	MR. GARRIE: But how does the
	Page 27

1	process then
2	So when a
4	How does the do that work? Because
5	that wasn't in there.
6	MR. CLARK: Sure. The initial product team
7	building the product, part of what they're trained
8	on on a regular and consistent basis and certify to,
9	they create a path within
18	MR. GARRIE: So as an engineer, does anyone
19	actually make a sorry.
20	
	I'm not saying engineers aren't the most
23	amazing people in the world. I'm just saying is
24	there any checks and balances behind the process?
25	MR. CLARK: There are checks and balances
	Page 28

1	behind the process, which is part of why
	It's part of why the
4	exists. It's part of why like
5	everybody is trained on it and agree to those
6	obligations to even become an employee at Facebook
7	or continue to be an employee of Facebook.
8	And so we take that program serious. So
9	there is follow-up and there are checks and balances
10	built into that.
11	THE COURT REPORTER: Mr. Garrie, I couldn't
12	hear you.
13	MR. GARRIE: That's kind of funny. I was
14	going to strike my comment anyway.
15	Off the record and we'll go back on.
16	(Discussion held off the record.)
17	MR. GARRIE: We'll go back on the record.
18	So then one other thing I didn't understand
19	is what are the possible decisions? Because I tried
20	to figure out what are the possible decisions that
21	come out of the ; like approved,
22	denied, incorrect. I was trying to figure that
23	out.
24	MR. CLARK: So approved or denied or an
25	incorrect.

<u> </u>	MR. GARRIE: Okay. What about schema and
locatio	on or stuff like that? I saw that referenced
as well	L.
	MR. CLARK: As part of and I think
having	worked on systems for way too long, when I
think o	of schema in traditional systems terms, it's
here's	the exact pointer to where it's sitting on
blocks	on disks.
	Where schema is referred to here, rather,
what it	t's pointing to is what we have a process
we call	
	- sorry
	And when we talk about
1.	

1	; right?
2	MR. CLARK: That is correct.
3	MR. GARRIE: Okay. Thank you.
4	MR. CLARK: I made the technical
5	assumption.
6	MR. GARRIE: No. No. I agree. I just
7	want everybody.
8	So
	Okay. We're good.
10	So then
11	right?
12	MR. CLARK: That is my understanding, yes.
13	MR. GARRIE: All right. And then there's
14	Okay. That makes
15	sense to me. All right.
16	I welcome any other
17	MR. CLARK: I don't know that that last
18	statement is accurate.
19	MR. PATEL: I don't think the last
20	statement is correct.
21	MR. CLARK: I wanted to correct that.
22	There aren't things that live in DYI that
23	aren't in DYI. DYI is the more complete set.
24	
	MR. MITCHELL:
25	MR. MITCHELL:  MR. GARRIE: Perfect. I get that. That
25	

answered that question.
So then there was a lot of discussion about
DYI. So I read in your information schema. It
looks like there was a lot of resources devoted to
that.
I guess my question to you gets more to
So question two is about what is in the
DYI.
Is there anything else that anyone else
wants to add to what we discussed so far about
question one?
I got all my questions answered.
Plaintiffs, now is the time to raise your hand if
you have a question.
Going to the next question. All right.
The second question. I read the answer and I have
follow-on questions to that.
As I understand from the answer, the data
is stored as raw, logged with event data in
Facebook's data warehouse. Facebook then builds
data pipelines from the data warehouse to
production.
If I understood that right, what is the
data warehouse called? I mean, you have dozens of
data warehouses and, I assume, that's only a
Page 32

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1	MR. PATEL: Yeah. So the most common one,
2	and I'm just speaking for the generalized version of
3	it, are built by data engineers or software
4	engineers on top of using these three
5	processing pipelines that I talked about:
6	Presto or Spark.
7	The language used for them is mostly SQL.
8	So it's really easy to understand. I'm sorry. It's
9	not standard SQL. It's not ANSI SQL.
10	MR. GARRIE: SQL. I can't remember. I've
11	seen it.
12	But basically the Facebook SQL query
13	language is used to build these pipelines? Is that
14	what we're
15	MR. PATEL: Yeah. Correct. It potentially
16	is Presto SQL. It's not Facebook SQL, but it's not
17	ANSI SQL. It's not the standard SQL that you know.
18	MR. ZARASHAW: Let me make a correction.
19	It is not Facebook SQL. There is an SQL
20	which was that was a query used format used
21	for the older versions of the developer platform and
22	this is not it.
23	MR. GARRIE: So you're using Presto? You
24	said Presto SQL?
25	MR. PATEL: Yeah. Primarily it's Presto
	Page 34

1	SQL. I believe is fully deprecated and Spark
2	is a future version of what we may use.
3	MR. GARRIE: How are the data pipelines
4	executed?
5	MR. PATEL: They're executed by a scheduler
6	called Dataswarm. So people write Python scripts
7	that describe effectively what a unit of task is
8	and what the interdependencies are. So an
9	interdependency, for example, wait on table X to
10	get data before you can process this meaningful
11	task because if you don't have data in table X, you
12	can't really go and query table X in your current
13	task.
14	MR. GARRIE: Are they sequential? Because
15	I looked at the ones of the list you gave me and
16	some are repeated; right? So we'll talk about the
17	exhibit itself.
18	But, I mean, the bottom line is they're run
19	by Dataswarm effectively. It's a scheduler?
20	MR. PATEL: Correct.
21	MR. GARRIE: Okay. And then where is the
22	data pipeline I might regret. Well, I don't know
23	how else to ask this.
24	So where is the data pipeline's output
25	stored?
_	scorear

1	MR. PATEL: The developers can choose where
2	to store it. You know, most likely, they're storing
3	it in another dataset to then be consumed by other
4	data pipelines or then to be moved over somewhere
5	else. But it's not uncommon for emailing stuff or,
6	you know, like if you just want to email the output
7	of a result or something like that.
8	MR. GARRIE:
11	Are
	or something
13	like that?
14	MR. PATEL:
16	MR. GARRIE: And then so where is can
17	they store it anywhere? Do they store it in the
18	? Is it stored in a subset of systems? Is
19	it
20	MR. PATEL: Primarily I would say most of
21	it goes back into
22	MR. GARRIE: And then other parts of it, I
23	assume, go to TAO, to other?
24	MR. PATEL:
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1	MR. GARRIE: Got it.
2	MR. PATEL: So we
3	MR. GARRIE: Go ahead.
4	MR. PATEL: Go ahead.
5	MR. GARRIE: No. Go ahead.
6	MR. PATEL:
8	MR. ZARASHAW: Pardon me for jumping in. I
9	do have to clarify.
10	
15	For example, for computing we do a very
16	
21	There are certain cases where cases
22	
24	MR. GARRIE: So then basically a dataset's
25	a table in the For lack of a better, is that
	Daga 27
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1	the equivalent of what we're and then it's
2	cheaper to do it there than to do it elsewhere, I
3	guess, from a computation perspective.
4	MR. ZARASHAW: Exactly. So once in
5	per day or per week, and then redo it as many times
6	as needed.
7	MR. GARRIE: So then returning back.
8	When you said the dataset, Mr. Patel,
9	that's a table. Is that what we're talking about?
10	MR. PATEL: Yeah. That's a table. That's
11	effectively another table.
12	MR. GARRIE: I technically get it.
13	MS. RING: Special Master Garrie, I'm
14	sorry. I'd like to clarify something.
15	Mr. Patel has worked on these pipelines, I
16	mean, for OFA, so in response to actually
17	Question Number 2. So I feel like we're kind of
18	talking in very general terms here, but this is just
19	for OFA and the pipeline that was created from
20	into DYI for OFA. I just want to be clear about
21	that and that they're talking about, you know,
22	internal Facebook engineer developers and not
23	third-party developers. So
24	MR. GARRIE: Are third-party developers
25	allowed to access the

1	MS. RING: What?
2	MR. GARRIE: I didn't think any third-party
3	developers are allowed to touch the
4	MS. RING: They are not. That's the point
5	I'm trying to clarify.
6	MR. GARRIE: Yeah. I'm assuming that
7	anybody that's touching these dataset tables or data
8	in the is an authorized Facebook engineer doing
9	some product-based specific activity for on-platform
10	work or some analysis or something. Nothing to do
11	with third parties at all. However, they're not
12	allowed to touch it. They may have a contract and
13	ask an engineer to do something and they may run
14	something, but the Facebook engineer is running
15	that. But I'm just trying to understand big picture
16	for the languages we saw.
17	So then is there a list of the existing
18	data pipelines? I mean, I got the five million, but
19	is there an actual list?
20	MR. PATEL: Sorry. A list for all the
21	pipelines at Facebook or the OFA pipeline?
22	MR. GARRIE: The OFA pipeline would be a
23	good place to start.
24	MR. PATEL: Yeah. Yeah. We could
25	potentially produce that.

1	MS. RING: I'm sorry. I have to clarify
2	that.
3	Do you mean the name of the pipeline? I
4	just want to be clear.
5	MR. GARRIE: No. I'll get to the points I
6	want.
7	MS. RING: Okay.
8	MR. GARRIE: I haven't decided what I want
9	yet or what I don't want. I just want to know what
10	is possible.
11	MS. RING: Got it.
12	MR. GARRIE: Don't take any question here
13	as a determination or direction of what I'm doing.
14	I'm just learning here.
15	MS. RING: Yes.
16	MR. GARRIE: So then what about can you
17	provide what data they can soon produce then for the
18	data pipelines?
19	MR. PATEL: Oh, we could yeah. We could
20	produce the SQL code.
21	MS. RING: Again, Mr. Patel is speaking
22	only to the OFA platform. Okay?
23	MR. GARRIE: Yeah. I got it loud and
24	clear.
25	MS. RING: I just want to be clear. I
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mean, they're sworn. We need to be clear about what 1 they are actually here to talk about. 2 3 So got it. I will shut up now. Thank you. MR. GARRIE: I am assuming that we are 4 5 speaking in very specific terms, but I assume 6 someone else, since there is an engineer that did 7 build the data pipeline, for whatever it is, can produce, that somewhere someone has the ability, it 8 9 sounds like. There's tables, good news, and there's SQL, well, Presto SQL, and you have input and you 10 11 have output and there's an engineering resource that 12 did create that whatever -- whatever they're running 13 in sequence that run are managed by the Dataswarm. Someone had to schedule it, approve it, and put it 14 in and I get that. 15 16 MR. CLARK: And there's such a long list because you can create a pipeline for temporary 17 data access. It's not generating new data. 18 only using existing data. So you can do that for, 19 as you mentioned earlier, research, trying to help 20 21 diagnose something that may be going on or like the 22 example that Mr. Patel is referring to with OFA is a 23 great example operationally to look at. 24 MR. GARRIE: They can literally do it for whatever. 25

1	MR. CLARK: Correct.
2	MR. GARRIE: It's like basically a data
3	junkyard.
4	MR. CLARK: Yes, it is, but it's also very
5	governed under the privacy program where the
6	biggest part of the training is what access to
7	data you have as an employee and how you are
8	supposed to treat and handle that access to data as
9	well. So
10	MR. GARRIE: I agree. There's a privacy
11	construct. Like you said, all the engineers get
12	trained and when they come on they sign these
13	compliance, they got to recertify. They got lots of
14	paperwork regarding the process on data privacy
15	management. I'm just trying to understand. So
16	there's not I'm not assuming anything bad. I'm
17	just trying to understand where it all sits and how
18	complicated these tasks are.
19	So then jumping in. Category 1,
20	on-platform. So this is user-provided data. Is all
21	user-provided data included in the DYI tool? I
22	mean, user provided. So I'll be very clear.
23	MR. CLARK: To the best of my knowledge,
24	yes, the user-provided data is.
25	MR. GARRIE: Okay. Are there individual
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1	fields from schemas that are not included in the DYI
2	file?
3	MR. CLARK: Would you repeat that question?
4	MR. GARRIE: Are there individual fields
5	from schemas that are not included in the DYI file?
6	MR. CLARK: I do not know.
7	MR. MITCHELL: I'm just clarifying.
8	Are you asking if we have a table that has
9	a series of columns about a particular user or are
10	we excluding a particular column? Is that what
11	you're trying to get at?
12	MR. GARRIE: A column. A value. I mean,
13	you guys call them yeah. In essence, like, I
14	don't know how yeah, a schema. Like a schema can
15	have columns, rows, depending on how you define the
16	object; right? I mean, it's all relative to the
17	design of the object and how you put the tables and
18	link the tables and everything else.
19	But the question is, they're fields that
20	don't make it in. I mean, so here's my my
21	well, let's actually differentiate because my next
22	question is about cold tables.
23	I'm talking about schemas. So field values
24	versus tables; right?
25	So because are there so like a schema
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1	a field in a schema is like a I don't know how
2	you guys refer to tables and datas and rows and
3	values. But an individual entry, okay, from that,
4	are those things not included in the DYI file?
5	MR. CLARK: I believe if we look at the
6	process for an engineer to add
7	I apologize. I can't just scroll through
8	it.
9	MR. GARRIE: I know.
10	MR. CLARK: So part of the
15	I think what you're asking, and this is why
16	I'm asking from a clarity perspective, is
17	MR. GARRIE: It's okay.
18	MR. CLARK: if there's something that's
19	stored raw in that row, that there's some other set
20	of data that may not go with that.
21	
22	MR. GARRIE: Yeah. At a field level and
23	MR. GARRIE: Yeah. At a field level and then at a table level.
24	
	then at a table level.
25	then at a table level.  MR. CLARK: I'm not aware of any, but my

1	don't know and we can double-check because that
2	will be because there's an engineering review
3	process and I assume that well, I don't know
4	to Ben's point, to Mr. Mitchell's point, I don't
5	know how you refer to it, but I'm talking about a
6	schema being a user's an object. My eye color's
7	hazel, my height, all of those things, right,
8	however you put, like, the eye color or the
9	circumference of my eye would be a field value and
10	then maybe the whole table describing my eye, just
11	as an example; right? So
12	MR. MITCHELL: Yes. So as I called out in
13	my declaration, like there are certain types of
14	things that we don't include deliberately. So it is
15	possible that there is a column that contains a
16	trade secret and that column and so we would not
17	include that in DYI. Right.
18	MR. GARRIE: Right.
19	MR. MITCHELL: And we're not going to
20	discuss on this call what those trade secrets might
21	be obviously, but like I think so it is certainly
22	possible that there are things that are excluded at
23	the field-by-field level.
24	MR. GARRIE: All right. And so that's not
25	user provided.

1	MR. MITCHELL: Fair enough.
2	MR. GARRIE: Users aren't providing trade
3	secrets. I'm only talking about user provided.
4	MR. PATEL: Yeah. We provide all user
5	provided. If you wrote in yeah. If you if we
6	had an option for eye color, we would provide that
7	in DYI and the user chose that.
8	MR. GARRIE: Yeah. We'll get to the other
9	ones in a second.
10	MR. MITCHELL: Okay. Yeah.
11	MR. GARRIE: Because you guys
12	differentiated it in your answers, user provided,
13	non-user provided. So I'm just going through it
14	that way rather than yeah.
15	MR. MITCHELL: Okay.
16	MR. GARRIE: And everything I give comes
17	in. Okay.
18	Counsel Weaver, what question do you have?
19	MS. WEAVER: I would be interested in the
20	definition of user provided and this is the reason.
21	For example, if I went on a website and off
22	platform, but on my Facebook log in and put
23	something in a shopping cart, but then never
24	purchased it, that is information that we do not see
25	in the Download It Yourself tool that our experts
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1	have said is certainly some information that
2	Facebook collects, but maybe that's not determined
3	to be user provided.
4	MR. GARRIE: You don't have to answer the
5	questions directly.
6	How are you I thought you provided the
7	definition of user-provided data, but how are you
8	defining user-provided data? Is it any different
9	than what was provided?
LO	MR. CLARK: I'm going to refer to the
L1	definition that we included where it was directly
L2	user provided from the first-party platform itself,
L3	from Facebook.
L4	MR. GARRIE: That's what I understood it
L 5	as well. I was using the definition that you
L6	provided.
L 7	So that would not be defined,
L 8	Counsel Weaver, as user-provided data.
L 9	MS. WEAVER: Right. I mean, and let me be
20	clear.
21	With first-party and third-party cookies,
22	arguably Facebook could have said if they use a
23	Facebook login, that's a first-party data point, but
24	I hear their definition here is saying it is not.
25	Is that correct?

1	MR. GARRIE: Well, you can read I mean,
2	if you read their answer, they have the written
3	definition in the engineering.
4	MS. WEAVER: Okay.
5	MR. GARRIE: And I don't know what page
6	it's on, but I'm certain I've read it.
7	MS. WEAVER: I've read it. It's just
8	unclear to me, but I understand the position they're
9	taking. Okay.
10	MS. RING: I'm sorry to interject, but the
11	question that Counsel Weaver asked, I mean, what
12	you just described there and, you know, Mr. Patel
13	is here. He worked on the OFA. It's just it's
14	not in the first category, but it's in the off
15	Facebook.
16	MR. GARRIE: I know. We're going to get to
17	it. That's why I'm not worried about it.
18	MS. RING: Okay. I just didn't want to
19	leave the impression it's not in the DYI file. It's
20	just not called user provided.
21	MR. GARRIE: Yeah. I get it. I'm fully on
22	board. You guys worked hard at this. I'm just
23	going through methodically the different pieces.
24	But her question was specifically about how user
25	provided is defined and we're only talking about

1	on-platform; right? So we're still in Category 1,
2	on-platform. We haven't even departed.
3	So observed data. Okay. So that's the
4	next bucket here. How is observed data collected
5	from the on-platform activity?
6	MR. CLARK: Yeah. I think we tried to
7	outline that like exactly with concrete examples and
8	exactly for what it is.
9	It includes interactions like clicks, what
10	profile, pages, groups, and events the users have
11	visited, the usage data, the device data, for
12	instance, data about the user's activity level,
13	advertisers with which the users interacted, IP
14	addresses, IP address, where they have users that a
15	user has chosen to see less or see first in news
16	feed, time spent watching from a page of the watched
17	product, people whose profile a user has visited,
18	last location, last active time.
19	I could keep going through lists, but we
2 0	tried to provide like a good set of examples of what
21	are observed.
22	MR. GARRIE: All right. So I'll get to
23	Counsel Weaver's question in a few minutes.
24	But what I don't understand is how are you
25	collecting it? Are you using like API? Like I
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	1 ~ 3 C 1 J

guess what I'm trying to understand is, there's a
lot of data you can observe. Right. There has to
be is there a table schema? I mean, is there
some I mean, are you collecting it into tables?
I'm just trying to understand how is it actually
I appreciate the examples. They were
helpful.
What I'm trying to understand is, how is it
actually being collected from an on-platform
activity? Is it being stored to, like, the like,
how is it actually working?
MR. CLARK: Through the series of examples,
they're all not stored in one place. Like, they are
part of the product.
So
Examples like
MR. GARRIE: But there's no unified
perspective of where all of the user observed data?
Like, there's no observed data table set or object
or schema or because I guess by product,
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1	different data is by different use of the
2	product, different data is observed. But a user,
3	based on the products they use, there's is it in
4	a schema?
5	I mean, how is the observed data being
6	collected? Is it going into a schema, in a table,
7	and then associated or on the platform or is it by
8	product? Is that how that's working?
9	MR. CLARK:
10	MR. PATEL: Yeah. I was just going to
11	MR. CLARK: Mr. Patel.
12	MR. PATEL: Yeah. Like,
17	And what we do is the ones that are like
18	the ones that we have access to, like that's the
19	whole question that you had, we're able
20	to produce those in Activity Log. While we're also
21	producing those in Activity Log, we can produce
22	those in DYI.
23	So some examples of it, you know,

1	for eventually to be downloaded in DYI.
2	MR. GARRIE: Okay. So then is the observed
3	data generated from the warehouse via data
4	pipelines? Is that how that's working on a
5	product-by-product basis or
6	MR. PATEL: I don't know the intrinsic,
7	like, pipeline of the pages you may use. I don't
8	know if Eugene knows it. But I would suspect that
9	
13	MR. ZARASHAW: I could try to help you out.
14	There are a number of different
15	infrastructure pieces that can be used for this
16	purpose. Each product team decides at the time
17	they're implementing the product what outcome
18	they're trying to achieve and, therefore, which
19	pieces of the infrastructure can best match the
20	outcome.
21	So if I could use a couple examples. One
22	would be, let's say, you like a page on Facebook.
23	That specific example happens to immediately go
24	into but the fact that you liked the page is
25	recorded in

1	because in order for this to work, you need to also
2	be able to see that you liked that page next time
3	you reload that page, which means there has to be
4	immediate real-time access to the fact that you
5	liked it available through the web content.
6	There are other cases where we might have
7	observed data like, let's say, the IP address a
8	person is visiting from. We might not even use it
9	and it ends up in as a log and that might be
10	the end of it. It just sits in
11	So it really depends on somebody coming up
12	with the scenario for how the data is to be used
13	before anything is done with it.
14	MR. GARRIE: Based on the product usage
15	effectively, and then from that you can find the
16	observed data by the product that's used by the
17	user.
18	MR. ZARASHAW: Exactly. And how that
19	product team chose to implement that specific
2 0	observed data.
21	MR. GARRIE: And then observed data sounds
22	like can come from pretty much anywhere. I couldn't
23	tell from the examples.
24	From what I could tell, I'm just trying to
25	list out where observed data is collected from about

1	a user, and it looks like it comes from lit
2	like, based on my examples, you cover pretty much
3	everything.
4	MR. CLARK: Yes. That goes back to like
5	that's why we walk through those in
6	And even just looking through my own, like, I have a
7	very, very consistent observation. Like, that is
8	the intention of the observed data.
9	MR. GARRIE: But observed data can be
10	stored based on how the product is built and
11	architected. It may be stored in the III III III III
12	be stored in It may be stored in
13	Like, I don't think it's directly to
14	somewhere it ends up in somehow that goes
15	to the social graph or MySQL or whatever the
16	engineer and the privacy team thinks is the
17	appropriate resource and it controls for that
18	observed data to treat it accordingly and store it
19	accordingly.
20	So then how much so then the other thing
21	I'm trying to figure out is how much observed data
22	is stored? For example, like how many page visited
23	are stored, how many group visits are stored, how
24	many devices is the data stored about? You know,
25	sort of, is there any limit?
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2 3 4	by that question?
4	MR. GARRIE: So observed data, you can
	observe all sorts of things; right? The question
5	is, how much observed data is actually stored about
6	a user and how many pages do you know how many
7	pages are stored? Like, is that stored for how
8	like like, is there anybody that would know or is
9	it on a per-product basis?
10	MR. CLARK: It's because of our scale,
11	that's going to be
15	And are you looking for the quantity of
16	like how many clicks were tracked or are you looking
17	for the number of places?
	for the number of places?  MR. GARRIE: What I'm looking for is, so
18	<u>-</u>
18	MR. GARRIE: What I'm looking for is, so
18 19 20	MR. GARRIE: What I'm looking for is, so let's say you deprecate how many clicks are tracked.
18 19 20 21	MR. GARRIE: What I'm looking for is, so let's say you deprecate how many clicks are tracked.  Right. How many like how many I guess how
18 19 20 21	MR. GARRIE: What I'm looking for is, so let's say you deprecate how many clicks are tracked. Right. How many like how many I guess how much do you store, like for a user is actually
18 19 20 21	MR. GARRIE: What I'm looking for is, so let's say you deprecate how many clicks are tracked. Right. How many like how many I guess how much do you store, like for a user is actually stored, but it sounds like that's determined by the
17   18   19   20   21	MR. GARRIE: What I'm looking for is, so let's say you deprecate how many clicks are tracked Right. How many like how many I guess how much do you store, like for a user is actually

1 MR. CLARK: MR. GARRIE: So then my next question is, 4 5 I'm reading over the DYI and AYI. So then -- well, 6 I'll give you a practical example. 7 For a while I was pretty good at losing phones, like masterful actually. So, I mean, 8 believe it or not, I don't know if I'm on my 20th, 9 but let's just pretend I am. I'm on my 20th phone 10 11 and do you have all of them or just the last or is 12 that product specific? 13 MR. CLARK: I can share, based on my own AYI file, I observed multiple devices that I've 14 15 switched over time. 16 MR. GARRIE: But I quess it depends on the 17 product; right? The mobile , then says this belongs in the DYI file. So 21 it's sort of driven that way rather than I mean, people have Palm 25 devices still, so... Page 56

1	MR. CLARK: There are
	and
3	part of that as well.
4	MR. GARRIE: So there are
	as well?
6	MR. CLARK: I cannot specifically say for
7	observed data versus other kinds of data. I
9	MR. GARRIE:
12	MR. CLARK: I could not speak directly to
13	that, but
14	MR. GARRIE: That's okay.
15	MR. CLARK:
17	MR. GARRIE: I understand.
18	And so then I guess my other question I
19	was trying to figure out, is all observed data
20	included about a user included in the DYI file, the
21	DYI tool? Sorry. You called it a tool. The DYI
22	tool.
23	MS. RING: I think Mike is locked up.
24	MR. GARRIE: My kids do that when we're in
25	school sometimes. When they're having remote
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1	school, they pretend to freeze like this.
2	MR. CLARK: I didn't know if that was you
3	freezing or me freezing.
4	MR. GARRIE: That's fine. Okay.
5	So the question I asked is, is all observed
6	data included in the DYI tool? I couldn't tell.
7	MR. CLARK: There are you know, I can
8	talk to some principles on why we would not include
9	something. And I think an example of something that
10	might be observed might be some behavior that, you
11	know,
15	There is some observation that, you know,
16	you
19	MR. GARRIE: There's data in the observed
20	data bucket that's not in the DYI file. It will
21	vary based on product basically is what you're
22	
<b>^</b> ^	saying.
<b>4</b> 3	saying.  MR. CLARK: Based on product and based on,
23 24 25	MR. CLARK: Based on product and based on,

MR. GARRIE: So is there any way to know what is excluded?

MR. CLARK: The items that meet those criteria, but I don't have an answer beyond that.

MR. GARRIE: And then because I'm just wondering like if there are individual fields that are excluded from the schemas or there are entire tables that are not included for observed data. Not trade secrets. Observed user data.

MR. PATEL: We've included the most meaningful ones that we believe that users want. Like, there's obviously product experiences that we've kind of excluded out.

For example, if you -- we have a product like Marketplace. If you open Marketplace for the first time, we may show you an introduction to Marketplace and, like, what all the -- this is hypothetical. So like an intro screen to like what all the buttons on Marketplace are I believe we provide when you open Marketplace, but we wouldn't provide you with the information that you went through; the tour, for example. That seems to be meaningless. It's also duplicative in that sense. But that is for the product experience

1	specifically.
2	MR. GARRIE: So then there's no delineated
3	way to determine what individual fields in tables
4	from the observed data per product have been
5	excluded from the DYI file as we sit here today
6	unless you go to each product and figure it out;
7	right?
8	MR. PATEL: Yeah. Correct.
9	MR. GARRIE: Again, no decisions are being
LO	made here just to head off any questions. I'm just
L1	asking questions.
L2	MS. RING: Special Master Garrie, I was
L3	going to suggest maybe a break, but I was also
L4	wanting to maybe let you get through. I know you're
L 5	going category by category. So I don't want to
L 6	interrupt that flow.
L 7	MR. GARRIE: Counsel Weaver, you have a
L 8	question.
L 9	We are going to take a break. Well, first
20	we're going to take Counsel Weaver's question.
21	MS. RING: Oh, okay.
22	MR. GARRIE: Then we're going to take a
23	break.
24	Just so we're all clear, the next category
25	is off-platform, Category 2. So we want to keep our
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1	questions limited to Category 1, on-platform.
2	That's what we're talking about.
3	Counsel Weaver.
4	MS. WEAVER: Understood.
5	For on-platform activity just
6	descriptively, would drafts of posts or drafts of
7	messages be included?
8	MR. CLARK: I would not know.
9	MR. GARRIE: Wait. I was I was going to
10	say I no. It's all right, Mr. Clark. I get
11	engineers want to answer questions. I'm the same
12	way. When my wife asks me questions, I just
13	automatically answer them. Well, for many
14	additional reasons, which I just answer. I guess
15	it's the fastest way to avoid pain.
16	But the point being is, I was interested in
17	that question as well. So if you wouldn't mind
18	answering, Mr. Clark, the question or anybody else.
19	MR. CLARK: With that specificity, I would
20	not know without needing to do further research.
21	MR. GARRIE: I mean, it's a
22	product-by-product basis; right? And there's a ton
23	of deprecated products and I assume, based on the
24	size of the datas that we're looking at, there's a
25	lot of it and it's compressed and everything else.

1	So they would need to go back and look on a
2	product-by-product basis.
3	MS. WEAVER: I would just state
4	Facebook Messenger is Facebook's own product and I
5	think that would be helpful.
6	MR. GARRIE: We're only talking about
7	Facebook, though.
8	MS. WEAVER: Okay. Fine.
9	And then the second question is the time
10	period overall, Special Master Garrie. It would
11	be I don't know if we're talking present when
12	you're receiving your answers. Maybe you are, maybe
13	the witnesses aren't, but it does seem like there's
14	some ambiguity.
15	MR. GARRIE: I'm assuming we're only
16	talking as of today, not anything deprecated in the
17	past.
18	Is that an inaccurate assumption, Mr. Clark
19	or Mr. Mitchell or Mr. Patel or Mr. Zarashaw? We're
20	talking about the way it exists today, not the way
21	it existed in the past; right?
22	MR. CLARK: That is accurate and correct.
23	MR. ZARASHAW: Correct.
24	MR. PATEL: Correct.
25	MR. GARRIE: You got to say yes,
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1	Mr. Mitchell, because they won't transcribe it
2	otherwise.
3	MR. MITCHELL: Yes.
4	MR. GARRIE: I give thumbs up, too, and
5	then people get confused when they read the
6	transcript.
7	All right. So we're going to take a
8	five-minute break, if that's okay with everybody,
9	and then we'll adjourn. I appreciate it.
LO	Is that all right? Do you guys need more
L1	than five minutes? Do you want ten minutes?
L 2	MS. RING: Maybe ten just because by the
L 3	time we get, whatever, and people can go get a drink
L <b>4</b>	or whatever.
L 5	MR. GARRIE: Yeah. Hopefully the JAMS
L6	moderator is here and everybody can go to their own
L 7	rooms. If not, that means I got to assign
L 8	everybody. I'll just open all rooms, then I'll
L 9	close them all.
2 0	THE COURT REPORTER: Are we off the record?
21	MR. GARRIE: Go off the record and strike
22	the last three sentences.
23	MS. RING: I'm not sure you can do that,
24	Mr. Garrie.
25	(Recess taken.)

1	(Off the record at 11:36 a.m. Back on the
2	record at 11:54 a.m.)
3	MR. GARRIE: We'll go back on the record
4	and get started. Back on the record.
5	We finished Category 1, on-platform
6	observed data, and we're now going to Category 2,
7	off-platform.
8	So my question here, and I did my best to
9	try to understand the information that was provided
10	in the prior information and all of that so I keep
11	it efficient, what type of third parties provide
12	off-platform activities? Like, I couldn't figure
13	out based on my look through the DYI file.
14	So I want to know what type of third
15	parties provide off-platform activities?
16	MR. CLARK: Third-party developers. So
17	that could be third-party developers using the SDK.
18	It could be third-party developers integrating with
19	the ads API.
2 0	MR. PATEL: Mr. Garrie, it's specifically
21	developers that have integrated our business tools.
22	So it's not any app. It is basically developers
23	have chosen to integrate the business tools. Like
24	app SDK, Pixel is another example, Facebook social
25	plug-ins, CAPI is another one, conversion API
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1	apologies for that acronym and the ads API.
2	MR. GARRIE: Is there a list of all of
3	the you gave me a list of products, but what I
4	couldn't figure out is, so it's integrating the
5	integrates to Facebook's app business tool API.
6	Does that include deprecated?
7	MR. PATEL: What do you mean by deprecated?
8	MR. GARRIE: I can walk you through the
9	license
10	MR. PATEL: What do
11	MR. GARRIE: (inaudible) community.
12	MR. PATEL: Sorry?
13	MR. GARRIE: Ones that you no longer want
14	to offer to the development community, but people
15	have built against and have invested substantial
16	resources and time to integrate into, but you don't
17	want to make it available to other new people, but
18	you keep it around for deprecated. Like Windows 95
19	still works. It's completely unsupported and
20	there's no patching for it, but you can still turn
21	on a Windows 95 computer and still use Windows.
22	MR. PATEL: Maybe I'll walk you through how
23	a developer integrates the Facebook business tool
24	because I don't understand the analogy with
25	Windows 95.

1	MR. GARRIE: All right. So basically I'll
2	give you a specific example based on what I read
3	from what you guys gave me.
4	Say I was five years ago and I
5	integrate into a now no longer available Facebook
6	business tool. Five years ago there were business
7	tools available that are no longer available today,
8	but I've had substantial resources to integrate
9	that. You've turned off you no longer offer
LO	that service to the marketplace, but you have an
L1	agreement with that says we're going to
L 2	provide this SDK to integrate. You agree to do
L3	this, we agree to do that and we will continue to
L4	support it, but you no longer offer that as a
L 5	developer SDK for any net new people or companies.
L 6	I mean, I can cite interrogatories. You
L 7	have literally lots of them.
L 8	MR. PATEL: In your question, would that
L 9	database be in OFA?
20	MR. GARRIE: Well, my question is, do you
21	still do they when you said business tools,
22	my question was is it deprecated business? Is it
23	just business tools today or is it business tools
24	since 2007?
25	MR. PATEL: It would be
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MR. ZARASHAW: There are a number of
Go ahead, Mayur.
MR. PATEL: No. Go ahead, Eugene.
MR. ZARASHAW: There are a number of
platform APIs we have fully deprecated over the
years where we one of the changes in platform
1.0 to 2.0 was the introduction of a deprecation
process where, for a lot of the APIs, they truly
stopped working after a certain number of days after
being deprecated and, yes, it meant that all persons
have to update their software to deal properly with
it, but we don't leave every single integration in
API running in perpetuity.
MR. GARRIE: My question is, when you say
Facebook business apps that they integrate to the
SDK, do you have a list of which apps? Like,
because those were available in the marketplace, but
there are ones that are no longer available that, I
assume, you still have agreements with developer
third parties where you have to continue to support
it at some level.
MR. ZARASHAW:
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1	
	for certain features of
4	the developer platform there is just a very simple
5	sign-up process that does not require review unless
6	they want access to the features that do require
7	review.
8	So an example would be if a website wanted
9	to put a light button there, anyone is free to
10	register an app ID on Facebook and put a light
11	button on their website and that would be an
12	integration or an app.
13	MR. GARRIE: That's how I understood it as
14	well.
15	So my question then becomes, at a practical
16	level, third-party and I guess we'll get to this.
17	You know, one of the business tools listed
18	is off-line conversions. So that's what I have a
19	particular question about because I didn't
20	understand what that tool actually does.
21	But before we get to that, I guess there's
22	no easy way well, you at least have
23	So anybody that integrates with Facebook
24	APIs or SDKs as a third party may be providing
25	off-platform activity back in some level?

MR. ZARASHAW: Yes.
MR. GARRIE: Just at a high level, where is
data collected via the business tool stored?
MR. ZARASHAW: So that goes back to the
pattern from earlier, which is the business tools
are an external facing set of interfaces, i.e., the
Graph API and some other tools, that front a number
of products.
So depending on the product represented,
the storage could be different. It's however that
product chose to store the data that's relevant.
MR. GARRIE: The data that's collected via
business tools, is it extracted and processed all on
the data pipeline from the warehouse? Is that how
that works?
MR. ZARASHAW: Not necessarily. Again, it
would depend on the product. So some specific
products may use for the right
immediately. Some products may use
Some products may have
MR. GARRIE: And these products will define
how the data is extracted and processed and where it
gets stored?
MR. ZARASHAW: Yes.
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1	MR. GARRIE: Okay. And then so I
2	understand the off-line conversion, what is that,
3	business tool?
4	MR. PATEL: The off-line conversion
5	business tool and I'm not an admin engineer, but
6	I will give you a high-level summary of what it
7	is is when an advertiser advertises on our
8	platform and wants to understand store sales, so not
9	specifically website sales that they may have, they
10	can upload information about purchases that happened
11	in their store with specific PII and we would
12	attribute it back to users that may have seen their
13	ad in order to provide them with a return on ad
14	spend.
15	MR. GARRIE: Yeah. So you're basically
16	giving them the Holy Grail of walk in the store, see
17	a digital ad, can I connect it to a sale.
18	Okay. And then is there documents I'm
19	trying to think of a better
20	Each business Facebook business tool, does
21	it have its own documentation about about what
22	data is collected? And not just today, but for
23	whatever is not only what you offer today, but
24	what has been offered; what is still available, not
25	
	necessarily offered.

So I'm distinguishing between offered and
available. Offered means we promote this in the
marketplace. Available means you know it exists, we
got permission to use it, it's available to you. So
I'm distinguishing between the two.
So my question is, for any business
product, is there documentation for each business
product that is available, is there documentation
about where the data is collected and stored?
MR. CLARK: So tying to that question, for
each of the business products and I hope this is
answering your question, Special Master Garrie.
For each of the business product
integrations, we do have very extensive
documentation for those business products that
instruct the engineer or developer or third party on
how to integrate in detail on the data that is part
of that integration and how to use that and all of
that is public documentation.
MR. GARRIE: Yeah. I looked at the
engineering website.
So is that for anything that's available or
only what is offered?
MR. CLARK: So we're talking specifically
about the business products integrations here. We
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1	have our third-party developer platform, which you
2	probably saw that documentation as well.
3	MR. GARRIE: They're different, though.
4	They're completely different.
5	MR. CLARK: They are completely different.
6	That is correct.
7	MR. GARRIE: Yeah. I mean, called
8	Search and State. They're different objectives
9	and, I mean, both code. We can both agree they're
10	software code, so and APIs, but they're
11	different. Right.
12	So the business products that are
13	available, is that true for all of them that are
14	available or only
15	MR. CLARK: So for all of those programs,
16	that documentation is available. That is not to
17	say that there are not additional APIs that are
18	developed as part of this, but those like, for
19	instance, I think a good example of this might be
20	the measurements API, which is available to a
21	limited number of folks to help with ad measurement,
22	for instance. But those, any APIs that are
23	developed, I'm going to broken record it a little
24	bit, like are part of both
	that goes

1	through and reviews any additions or changes how
2	people integrate any data, read or write, that is
3	shared to make sure that we have proper consent and
4	everything else in addition to,
5	which would make sure that that data would end up in
6	DYI.
7	MR. GARRIE: I'm just thinking about the
8	answer.
9	MR. CLARK: Oh, yeah.
10	MR. GARRIE: Are there private APIs for
11	business?
12	MR. CLARK: I am aware of the business
13	products API platform, but I I personally don't
14	know of any. That doesn't mean that they don't
15	exist.
16	MR. GARRIE: They would have to be
17	documented at some point.
18	MR. CLARK: Correct.
19	MR. GARRIE: There would be some process.
20	Who has the so then who has the master
21	list, so to speak? Who runs the API,
23	MR. CLARK: The is run by our
24	developer platform team and they do the reviews of
25	those.

MR. GARRIE: They would have a list, I
assume, of the work they do; right?
MR. CLARK:
MR. GARRIE: I'm not saying I want any
list, just to repeat myself again. I'm just trying
to figure it out.
And then for the off-line conversion tools,
I guess there's a specific person at Facebook for
each of these tools that would tell me where
what's collected, where it's stored, where it's
extracted, and where it's processed. Is that an
accurate assumption or can somebody here answer the
question?
MR. CLARK: For that full life cycle, that
would be product by product. I believe for some of
the OFA components, which is the acronym we use for
off-line activity, that Mayur can speak to elements
of the life cycle of that data and how we present
that back.
MR. GARRIE: So then for off-line for
off-line conversion tools, where is that data
stored?

1	MR. PATEL: Yeah. The data that's pulled
2	or basically effectively brought into the OFA
3	transfer, which then would be brought into DYI, is
4	stored in We store it on a
	We then
6	as well as
7	and then
	and
9	and that's what we effectively upload into OFA and
10	then eventually to DYI.
11	I don't know if that answers your question
12	or what you're looking for.
13	MR. GARRIE: So you store it in the
14	and then you use Dataswarm to schedule and that
15	runs the processes that then pipes the data out
16	into
17	MR. PATEL: It has to be it has to be
18	Because you could
19	think of it the data is stored at that level.
23	MR. GARRIE:
25	And that's done in and then piped out
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MR. PATEL: That's then  That is, since all the data is now on a  MR. GARRIE: And the data is stored in (inaudible).  THE COURT REPORTER: We can't hear you.  MR. PATEL: Sorry, Special Master Garrie, we lost you.  MR. GARRIE: Sorry. I was just thinking. So then  I guess?  MR. PATEL: Yeah. Correct. Like, you can't hear you're storing it on commodity kind of hardware, so like think of hard disks; and then when you're storing it in you're storing it and I'm going to speculate here. I don't know the exact internals of but I assume you're storing it	to where is that piped to?
MR. GARRIE: And the data is stored in (inaudible).  THE COURT REPORTER: We can't hear you.  MR. PATEL: Sorry, Special Master Garrie, we lost you.  MR. GARRIE: Sorry. I was just thinking.  So then  I guess?  MR. PATEL: Yeah. Correct. Like, you can't hear you're storing it on commodity kind of hardware, so like think of hard disks; and then when you're storing it in you're storing it and I'm going to speculate here. I don't know the exact	MR. PATEL: That's then
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internals of but I assume you're storing it	going to speculate here. I don't know the exact
	internals of but I assume you're storing i
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1	not exactly sure, but it's not a hard drive.
2	MR. GARRIE: So then so then is there
3	then documentation about how Facebook processes the
4	data they get from business tools or is it by
5	product?
6	MR. PATEL: It is by product.
7	MR. GARRIE: There is documentation for the
8	conver off-line conversion business tool that
9	explains what you just said effectively?
10	MR. PATEL: What I explained is how we take
11	and summarize the data in a manner that can be
12	produced back through DYI and the OFA tool. There's
13	a lengthy process that goes into matching users.
14	That's not part of, like, my expertise there.
15	MR. GARRIE: Okay.
16	MR. PATEL: You are effectively taking the
17	output of what the team is the product team has
18	done and producing a summary of it.
19	MS. RING: If I may, Special Master Garrie,
20	just again going to kind of what Mr. Patel focuses
	Jube again going to kind of what Mr. rater rocases
21	on and I don't know if this is clear, the
21	
22	on and I don't know if this is clear, the
	on and I don't know if this is clear, the distinction between.
22	on and I don't know if this is clear, the distinction between.  Do you know what the OFA tool is? I don't

1 transparency tool that contains a subset of OFA 2 information. So everything is -- you know, the OFA information that goes into DYI, the OFA tool has 3 like a subset of that data, but I just want it to be 4 5 clear. 6 MR. GARRIE: Yeah. It's an off-line -- I 7 mean, I thought that was the acronym for the off-line activity. 8 MS. RING: It is. It is. 9 MR. GARRIE: It's different than the 10 11 off-line conversion tool we're talking about. 12 MS. RING: Well, the off-line tool. 13 Off-line conversions are one thing, then there's off-line tool. 14 15 MR. GARRIE: I know. That's what I was 16 talking about. Yeah. I get it. 17 MS. RING: Okay. MR. GARRIE: But I'm talking about off-line 18 I'm talking specifically about the business 19 tool, off-line tool that was identified in the 20 21 answer. 22 MR. PATEL: Sorry. Maybe I'm not getting 23 this straight. Like, the off-line conversions tool is just 24 25 an API that advertisers can call into.

MR. GARRIE: Okay.
MR. CLARK: Let's step back for one second
and we'll walk through this. That way we'll make
sure we're all on the same page.
So one of the business products that
somebody can integrate with is actually called
off-line conversions. Off-line conversions means I
either have an event or a store and I provide sets
or details or create a custom audience from that
off-line event to drive that. We have documentation
on that process and how to do that on the business
tools page.
In the same way, we have on-line
conversions that can be measured or that can be
implemented via SDK, whether I mean, there's
different types of calls and things associated with
both visiting that advertiser and certain kinds of
events.
From a transparency perspective and going
to the other side for what we provide to the
consumer, we have a product called OFA.
MR. GARRIE: That part I get.
MR. CLARK: Okay. And subsets of and
sorry.
All of OFA is included in DYI. Some of OFA
Page 79

1	is included in AYI. I just wanted to make sure we
2	were all talking about
3	MR. GARRIE: No. No. That was the
4	documentation. That was the documentation you gave
5	me. Yeah.
6	I was specifically interested in the
7	off-line conversion tool because you referenced it
8	and I was just wondering, but it's an API
9	basically.
LO	What I wanted to know isn't about the OFA
L1	tool. My question, sorry, I should have been clear,
L2	off-line conversion business tool is what I was
L3	trying to figure out is how does it collects
L4	data, right, from off-platform?
L 5	MR. PATEL: Yeah. Just one clarification.
L6	Like, Facebook receives the data from the
L 7	advertiser. Right. Like, there needs to be an
L 8	action of a coral command run or an upload of an
L 9	Excel sheet. Like that's that's a distinction.
20	MR. GARRIE: That's what I thought.
21	So if you have to upload it, do you know
22	where where is it stored? Like, that's what I'm
23	wondering is where is that information stored? Is
24	it stored in the Hive or is it stored somewhere
25	else?

1 MR. PATEL: which is 3 a source for the OFA tool is what I explained. MR. GARRIE: I get it. I get it. Yeah. 4 5 So I get that part. I'm interested in the off-line conversion 6 7 tool itself, not the OFA part, because the off-line conversion tool is collecting data. Basically I 8 9 understand you collect data. I upload. I run a business. I upload -- put all these widgets to 10 11 whoever. I upload a spreadsheet. You map it to 12 whatever digital ad units, whatever. That then gets 13 displayed back to me as the business owner, so to 14 speak, to have my strategic ad spend. 15 I'm not sure exactly how it works, but some 16 ROI that makes you want to buy more ads effectively 17 in some way or add some ROI to the process of the money I'm spending and I'm just wondering where does 18 19 that data actually get stored that they're uploading for that tool? 20 21 MR. PATEL: Yeah. So it would be a variety 22 of systems. Like, our return on ad spend, for 23 example, is probably stored in some of our

1	MR. GARRIE: No. I get it.
2	So the off-line conversion tool, when they
3	upload their data into the system, what I'm trying
4	to understand is what data is being so that's
5	data being collected via a business tool, right, as
6	well as the ad.
7	MR. PATEL: Uh-huh.
8	MR. GARRIE: But that data being collected
9	is data that the user's uploading.
LO	So my question is, is the data collected
L1	is that that particular off-line conversion tool,
L2	is that data being collected and processed, like
L3	extracted and processed on all of the data pipelines
L4	via the is my question?
L 5	I was just trying to figure out how that
L6	tool ran. If you don't know, it's completely
L7	acceptable.
L 8	MR. PATEL: No. I wouldn't know the
L 9	internal workings of it.
20	MR. GARRIE: That's fine. You're talking
21	about OFA and off-line conversion.
22	All right. Next. So then broadly speaking
23	in the answers, I'm moving forward, how many
24	advertisers provide content lists for generating
25	custom audiences? Like, do you track that or how
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1	that comes through? I couldn't figure that out.
2	MR. CLARK: Let me see if I can clarify
3	this because I think and I'll go back to that
4	lens of like as a consumer when I download DYI, I
5	can see every custom audience that my information
6	was attached to or who were the advertisers that
7	did that. We don't actually see your information.
8	We match your information because we receive it
9	hashed.
LO	MR. GARRIE: So then is there documentation
L1	on how Facebook processes the data they get from the
L2	advertiser?
L3	MR. CLARK: There is so I'll answer this
L4	in two ways.
L 5	There is clear documentation on the
L6	business tools page on how to upload and build your
L 7	custom audience and how to work with that part of
L 8	the process. And so that that documentation does
L 9	exist, how to set all that up and what fields are
20	accepted.
21	I believe the other part that you're asking
22	for is, is there a document that explains how that
23	works internally and where it's stored. This is
24	going to be another like, it's product by
25	product. So we'd need to get a specific engineer in

1	that space to talk about that.
2	MR. GARRIE: I got it.
3	So my question so to give you an
4	example. I'm a user. I get uploaded. That gets
5	distributed to Facebook. So it sounds like that
6	product specifically has made is input into a set
7	of schemas that is product specific that then
8	aggregates itself out basically.
9	MR. CLARK: Correct. Especially since it's
LO	not access we don't you know, my email
L1	mike@mike.com is not going to be what Facebook
L 2	receives.
L3	We will receive a hash. And so that
L4	matching, like, occurs. So that one especially is
L 5	processed in its own unique way and we'd want to
L 6	talk to the product engineer from that space.
L 7	MR. GARRIE: And do we know where the
L 8	storage location for custom audiences is? That was
L 9	the other thing I couldn't I know it ends up in
2 0	the DYI file at some point, but where is it actually
21	stored?
22	MR. CLARK: I don't have that answer off
23	the top of my head. I would need to clarify I
24	would want to clarify that, unless you do, Mayur.
25	MR. PATEL: Yeah. So custom audiences are
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	rage of

1	stored in It's just a different type of
2	
3	MR. GARRIE: And are the custom audiences
4	then stored per advertiser or how are they stored?
5	MR. PATEL: That I wouldn't know. Like, I
6	wouldn't know the schemas of how these audiences
7	are. I just have a general idea of, like, that
8	system stores them.
9	MR. GARRIE: But are all the and the
LO	reason why I'm asking, what I'm trying to figure
L1	out, and maybe I should have asked this first, are
L 2	all custom audiences included in the DYI tool in
L3	total, all of them?
L4	MR. CLARK: That you are a part of or
L 5	associated with. I think specifically in the tool
L6	it's advertisers using your activity or information
L 7	and, to the best of my knowledge, that is the
L 8	complete set of custom audiences that you are
L 9	matched to.
20	MR. GARRIE: I just want to make sure I
21	understood it.
22	If I'm a user and I end up in 20 different
23	custom user custom audiences, every single one of
24	them is included in the DYI file?
25	MR. CLARK: Correct. To the best of my

1	knowledge, yes. And we classify it as a list
2	uploaded or used by the advertiser in the DYI file.
3	MR. PATEL: Yeah. There's a second
4	category, too. Website or a custom website or
5	app event activity.
6	MR. CLARK: That is correct. Interactions
7	you may have had with the advertiser's website, app
8	or store, which would include your off-line
9	information that you're referring to.
10	MR. GARRIE: Yeah. Exactly.
11	So then you get off-line information from a
12	third-party integrated product about whatever.
13	That's stored by product somewhere in the
	And then from there, whether
15	it's from a third party or on platform, I get if
16	I get tagged in a custom audience, all of that's in
17	the DYI file.
18	MR. CLARK: Correct.
19	MR. GARRIE: All right. That was
20	Category 2, off-platform.
21	Do plaintiffs have any questions they wish
22	or further clarifications they think would be? I
23	see no hands, so I assume no.
24	Okay. So then could you write a query, out
25	of curiosity? Well, I guess
	Julius Ju

1	So then inferred data, how is inferred data
2	actually computed? Because I could not figure that
3	out from the answer.
4	MR. CLARK: So it's derived and it's
5	derived depending on the type of things. I think
6	like there's I'll use a couple concrete examples
7	because I think it will make it easier to
8	understand.
9	I think one is your primary location. We
10	don't ask you your primary location, but based on
11	your location, we can derive that that is your
12	default or primary location.
13	Your time zone, we don't ever ask you
14	specifically for your time zone, but we're able to
15	derive that based on your primary location and based
16	on other sets of information.
17	And interests is one that's in the list as
18	well that based on based on information, we're
19	able to derive a set that matches to that. Even
20	language, like watching or being able to derive
21	what your preferred language is or language you may
22	know based on responding in comments using other
23	languages, able to derive a set of information like
24	that.
25	MR. GARRIE: Is there a list of the data
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1 sources used that identify the derived datasets? Because derived data varies by definition, but it's 2 another data; right? So is there --3 MR. PATEL: Is there a particular type of 4 5 data that you're interested in? 6 MR. GARRIE: Well, for all of us, the judge 7 said all data on derived. It wasn't limited. Derived data was very broadly defined. So I would 8 welcome any insights, whether narrow or broad. 9 The judge did not delineate derived data from geo 10 11 location or from phone or from third party. It 12 wasn't delineated. 13 MR. PATEL: I'm not the expert in that. Page 88

and we want to

make sure that, you know, we produce the right communication mechanism back to the user there as well, the right language.

So these are just broad set of examples.

MR. GARRIE: So I guess what I'm trying to figure out is, what is the source of the data that is derived data? It's all -- like, is it -- I mean, I get it's computed based on some algorithmic analysis that you perform.

MR. CLARK: It connects back to one. Like, my on-platform activity, that is the mix of -- that's both -- from a category perspective, that's both the user-provided data, the things like preferred location, like the first place is what do you put as where you live right now, but also observed data and that observed data is IP address, it is everything else that I interact with.

So I believe -- I believe mine currently says that I live in -- my location as it says in my DYI is Denver, which is accurate, but I believe my profile says I live in Oakland. So it's based on this combination of first-party activity as we outlined in one for this derived data.

1	MR. GARRIE: What about off-platform
2	activity as well? Does the off-platform activity
3	factor into derived data analysis?
4	MR. CLARK: Not
5	MR. GARRIE: Because you put examples in
6	there about like music or recommendations.
7	MR. CLARK: A couple of things that we
8	refer to as and this is where, like, defining on
9	or off platform, things that aren't Facebook, like
10	the portal, the frames that we talked about, my
11	voice interactions are derived data that I have
12	access to. It's a product that we make, but it's
13	not on the Facebook platform.
14	MR. GARRIE: So I think I know where this
15	goes. I think I've finally figured out what Mayur
16	was telling me before.
17	But once a data point about me is derived,
18	where does it usually end up? I assume it's either
19	the TAO or Hive, but I don't know that.
20	MR. ZARASHAW: So
	Usually the
23	decision is based on
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1	So, for example,
2	it's something that will only be used for
	such as
4	
5	MR. GARRIE: I mean, would it be a fair
6	is there a list of all is there a list of all the
7	derived data points being calculated for a user?
8	MR. ZARASHAW: It, once again, ends up
9	being something very product specific. I'll build
10	on Mike's earlier new user experience example.
11	You can imagine that you can do a big
12	pop-up experience the first time a user visits
13	Marketplace to walk them through every aspect of
14	how Marketplace works and it's going to be an
15	intrusive experience because you are keeping the
16	user from using the product until they go through
17	the tour and it would be rather annoying for a
18	person if that popped up every single time they went
19	to Marketplace after the first.
20	So one piece of derived data would be has
21	the person gone through that tool before. Whoever
22	is implementing it on the Marketplace team would
23	decide how should they store that so that every
24	single time the person comes to Marketplace we check
25	it; and if the person has already gone through the

1	tour, we don't pop it every single time.
2	MR. GARRIE: That would be stored in
3	right?
4	MR. ZARASHAW: Exactly. So, most likely,
5	because we would not be able to
7	MR. GARRIE: Yeah. So to repeat my earlier
8	statement, I'm not looking for 100 percent accuracy
9	here. I'm just looking for the systems that, most
10	likely, have like, it sounds like every piece of
11	data you have would is a draconian process for
12	an individual person, but it sounds like it either
13	ends up in or some subset of tables in
14	the (inaudible).
15	THE COURT REPORTER: I'm sorry.
16	Mr. Garrie, we can't hear you.
17	MR. GARRIE: Okay. Yes.
18	So depending on
	it, more or less, will sit in or
20	
21	MR. ZARASHAW: I wouldn't say
	Yes, most of the time it will end up in
24	
25	MR. GARRIE: And you would need it
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1	sometimes
	and you would need that data and
3	you wouldn't want to
5	MR. ZARASHAW: Precisely.
6	MR. GARRIE: Does Plaintiff have any
7	further questions about Category 3, inferred data?
8	MS. WEAVER: I think that we do, but I
9	think we need to caucus and we'll circle back. But
10	you should move on, Special Master Garrie.
11	MR. GARRIE: I'm going to keep going. When
12	we take our next break, that will be an opportunity
13	to caucus and I'll consider the questions at that
14	point.
15	MS. WEAVER: Thank you.
16	MR. GARRIE: Can we keep going? Is that
17	okay for everybody? It's good for me. Is it good
18	for everyone else? Say if it's not, then we'll go
19	from there.
20	MS. RING: Yes.
21	MR. GARRIE: Perfect.
22	Now we're getting to, so there's this
23	paragraph and I don't know, it's a question I had,
24	which is what are the reasons for not including
25	content specific data in the DYI tool?

1	MR. MITCHELL: Could you clarify what you
2	mean by content specific data?
3	MR. GARRIE: I could read you as it was
4	described to me in the answer and then I will.
5	It says I just want to be I want to
6	be
7	Like what item I added to the cart.
8	Remember that earlier example about I'm shopping and
9	I add that to the cart. That doesn't end up in the
LO	DYI file, but it's shared back to you guys.
L1	MR. CLARK: So perhaps the place to start
L2	is looking at what is in the DYI file.
L3	MR. GARRIE: I did that actually. So I got
L4	that down.
L 5	MR. CLARK: Okay. So when you look, and
L 6	I'm just going to look at my own personal one,
L 7	the I'll go to Luluemon and I will see that I
L 8	have page click. I will also see that I have, well,
L 9	page view, initiate checkout, and purchase as event
20	names, I have the date and time that those were
21	received on, and then I have an identifier.
22	And going back to the documentation on the
23	business tools that we have, there are primary
24	things that we map that are translatable that we can
25	interpret based on how the information is given to

1	us and that information are the fields. We know
2	that this like, one, it's tied to myself as a
3	user. There is an IP to this event. That event
4	included the initiate checkout and received on.
5	We do have custom fields, but we don't have
6	control over what the person puts in those custom
7	fields nor are they translatable to us. If you've
8	gone and looked at examples yourself, they don't map
9	to specific schema.
10	MR. GARRIE: Yeah. But it does not include
11	data identifying the specific content that was
12	viewed for the item that was added to a cart.
13	So my question is, what are the reasons for
14	not including
15	You asked me specific content. So I'm
16	giving you examples.
17	So what are reasons for not including
18	content specific data in the DYI tool?
19	MR. PATEL: It's not interpretable by us.
20	It could be any random string that the advertisers
21	could send. Also, the events that are in place,
22	like the view content, the add to cart is something
23	that the developer builds. Right. Like, not all
24	developers have the same competency as Luluemon.
25	There could be developers that accidentally just

say you purchased everything instead of viewing 1 content. We can't verify all the inputs there, and 2 so it's really, like, unintelligible to us to explain that to users. 4 5 MR. GARRIE: Okay. So that I understand. MR. PATEL: Okay. 6 7 MR. GARRIE: But you do -- but the company provides you that data and I get that, the integrity 8 9 of the data, the quality of the developer, and the other factors you've explained. My question is more 10 11 different. 12 So that data is stored somewhere; right? And so what's the decision -- how is the decision 13 made about the content specific data provided by 14 15 like Luluemon is a great example that there was a 16 decision made that, okay, this could go in the DYI file, but the other person, who knows, whatever, 17 didn't make it in? So like content specific. 18 19 MR. CLARK: We don't filter out by -- like, Costco and United and Luluemon are all there and 20 21 we're not filtering out anybody that sent events if 22 that's -- I want to make sure, Special Master 23 Garrie. I'm saying content 24 MR. GARRIE: No. 25 specific. So I'm not saying you're filtering out Page 96

1 by vendor.

Is there any content specific things that aren't included in the DYI tool that you get that isn't included?

MR. PATEL: Yeah. So there would be the event names if you have custom event names are the content. We have standard names like view content, purchase, add to cart, leave, and there's a few others. I can't name them all off the top of my head.

MR. GARRIE: But they're documented.

MR. PATEL: They're documented in the public API, the public documentation. But an advertiser, if you think of it, a Pixel Fire or an app event is just a coral call. Like, it's just an HTTP request that goes over and can be modified to anybody as well. Right. Like, you can add a custom -- like, is this a JSON log or maybe it's in the query params, but you can add any kind of event name that you want. It's not -- if you choose, you want to call it add to cart without the underscores, that's up to you. But we provide a standard set of features. And if we get something that's not in the standard for the event name, we call it custom events because we just don't know what's in there.

1	And similar for content we provide. Yes,
2	you come and say what the value is, what the
3	currency is as well as what what content you may
4	have added as well as the name, but we can't verify
5	that at that point.
6	MR. GARRIE: That doesn't end up in the DYI
7	file.
8	MR. PATEL: Correct.
9	MR. GARRIE: So I'm just thinking about it.
10	It's just a lot of information and I just want to
11	make sure I understood.
12	So then are there any reasons besides it
13	not being intelligible, or it's not it's not
14	intelligible, they didn't tell you, not including
15	content specific data in the DYI tool?
16	MR. PATEL: No. Besides that, no.
17	MS. RING: Special Master Garrie, I just
18	want to clarify.
19	When you said not intelligible, they tell
20	you, what they're saying is what they tell us is not
21	intelligible. So I just wanted I want to clarify
22	if you're thinking these are two different things
23	or
24	MR. GARRIE: They didn't tell
25	MS. RING: let them explain something.
	Da == 0.0
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1	MR. GARRIE: What happened is they didn't
2	bother to tell Facebook what they're doing, and so
3	Facebook doesn't know how to interpret the custom
4	values and, therefore, it doesn't stick them in the
5	DYI file. So it's unintelligible to Facebook
6	because nobody's told Facebook what the data is that
7	they're getting from the third party because they
8	have no way to verify because they have a standard
9	set of APIs that are public that say this is how it
10	works, but they have custom events or JSON. I don't
11	think it's JSON, but they have custom events that
12	could be called and that information, they don't
13	know what it is, isn't included in the DYI file, but
14	Facebook gets the data.
15	MS. RING: But the data is gibberish
16	sometimes. I just want to make sure that
17	distinction is not lost.
18	MR. GARRIE: Gibberish means that it's not
19	intell to the person that's providing it, it
20	makes sense. To Facebook, it doesn't make sense
21	because nobody told Facebook what it is.
22	MS. RING: I defer to the engineers on
23	that, but I think what we saw is gibberish. So I
24	don't know. How would you guys explain it? Sorry.
25	MR. CLARK: I would assume it has meaning
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1	to the person that wrote that integration.
2	MR. GARRIE: Yeah. I mean, I would assume
3	that's why they wrote it.
4	I mean, the real question, I guess I
5	mean, maybe there are developers that just
6	write gar yeah, it's probably true there are
7	developers that just write garbage for writing code,
8	but assuming there are developers that
9	I mean, the real question is, you store all
LO	custom event data that is I mean, or do you
L1	discard it is the question, I guess, for the user?
L2	MR. CLARK: I would want to unless Mayur
L3	has a specific answer, I would actually want to talk
L4	to I'd want to like from this this is the
L 5	extent of my understanding on that process and
L6	product and how it worked on it. I'd want to talk
L 7	to that product team specifically.
L 8	MR. GARRIE: Unless we can get a quick
L 9	answer. No. I'm kidding. No pressure.
20	So we'll talk to the product team and we'll
21	go from there. All right. That makes sense to me.
22	All right. So then question number three,
23	I promise not all of them will they will speed
24	up. But at the beginning and hopefully we don't
25	have to do it again. So better now than do it
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1	twice.
2	What are some examples of the Dataswarm
3	tasks? I saw about 10 of them. If you want, we can
4	go through. Just at a high level, what are some
5	examples, and then we can look at
6	MS. RING: Special Master Garrie, none of
7	these engineers here are specialists or, you know,
8	deal with the Dataswarm. We were just answering
9	this question, and so we put together we were
10	trying to answer the questions. We put together
11	we first tried to identify what the system was, and
12	then we gave you the samples just so we can show you
13	what's there, but none of the engineers that are
14	here today, since that wasn't one of the categories
15	for engineers, focuses on Dataswarm.
16	MR. GARRIE: Okay. I'll just tee up the
17	questions I do have so you can
18	MS. RING: Okay.
19	MR. GARRIE: at least figure out.
20	MS. RING: Okay.
21	MR. GARRIE: So, you know, does a task
22	operate on a single data point or on multiple rows?
23	That's one question I'm interested in.
24	Is there documentation on task dependency
25	chains that were created for specific purposes?
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1	Based on what I've heard, I'm pretty certain there
2	are because it sounds sequential at least for some
3	of it, but I could be wrong.
4	And then under that is how does Facebook
5	keep track of what each task is used for? Because
6	it is you know, and are tasks ever modified?
7	And then are dependency this is
8	something that are dependency chains ever
9	removed to reduce the amount of computing that is
10	done?
11	And then how does Facebook keep track of
12	what all the Dataswarm tasks accomplish?
13	And then is there a task and I don't
14	well, I'll ask the question.
15	Is there a task for each Hive table that
16	serves as a start task, in quotes, like a start
17	task?
19	And then do Dataswarm tasks write data to
20	other systems or only back into the Hive? I think I
21	know the answer based on what we've talked about,
22	but it would be good if there was someone that
23	could.
24	And then is the data in the Hive used by
25	production systems? I think yeah.

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25

1	And then how do production systems query
2	data in the Hive? I think it's Maybe not.
3	I don't know. And if so, you know, I have a couple
4	questions about because this all writes
5	directly to the eventually this is all user data
6	that's being operated on in the Hive.
7	And then how is data from the Hive
8	transferred to other storage that can be queried? I
9	think I got some of the ways. Sounds like they can
10	do it any way they want, but maybe I'm wrong.
11	So those are sort of the questions I had
12	about the Hive and if my assumption's right.
13	Well, that was fast. Let's go to question
14	four.
15	So I guess, broadly speaking, before we go
16	to question four, does Facebook retain user activity
17	that doesn't end up in the DYI file?
18	MR. CLARK: As I walked you before, like
19	there are specific cases of data where like that
20	association isn't like we can't fully determine
21	or guarantee that it's that user and wouldn't want
22	to give them somebody else's data.
23	MR. GARRIE: So like a constant event
24	basically.
25	MR. CLARK: I don't know that. That may
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1	not be the example, but if that helps a mental model
2	to think about it.
3	MR. GARRIE: Okay. So there's basically
4	the same answers you told me in the beginning. I
5	get it.
6	MR. CLARK: Yes.
7	MR. GARRIE: Question four, the user ID. I
8	guess, does the information I don't know I
9	don't know if this is the right person, but is the
10	information about the user, first name, last name,
11	email, phone number, stored in one specific
12	location?
13	MR. PATEL: Only one specific location or
14	do you mean a specific location that you can go look
15	up?
16	MR. GARRIE: One or the other.
17	MS. RING: Wait. I'm sorry.
18	Just so it's clear, question four is about
19	identifiers. So like identifiers. Not information
20	about
21	MR. GARRIE: But a user ID but a user ID
22	is information about the user, such as first name,
23	last name, email, phone number that would be
24	associated with the user ID, but it could match
25	their user table.

1	MS. RING: I just want to clarify that, you
2	know, this is not what the question was about, but I
3	think they were asked to answer internal identifiers
4	that Facebook was using, just to be clear.
5	So you're asking if Facebook uses name or
6	phone number as an internal identifier?
7	MR. GARRIE: No. Maybe I shouldn't have
8	said name.
9	My question is, is the information about
LO	the user ID stored in one specific location?
L1	MS. RING: Okay. So it's about
L2	identifiers.
L 3	Do you guys know?
L4	MR. ZARASHAW: So user IDs are 64-bit
L 5	integers where a set of databases that are back in
L6	are used to generate the user IDs and they are
L 7	used as a foreign key everywhere else to refer to
L 8	that user.
L 9	There is a primary place where that user ID
20	and some information about a user is stored, which
21	is However, the information may also be stored
22	in
23	MR. GARRIE: That makes sense.
24	So my question is, is there a master user
25	ID table, I guess? It sounds like there is.

1	There's 64-bit characters and you're running out of
2	them. So you must have been there.
3	MR. ZARASHAW:
7	MR. GARRIE: I forgot you're so big. Yes.
8	I know there's a given size. Yes. Just like
9	the extraction layer in itself.
10	So then do any other systems store this
11	information or do they only store user ID?
12	MR. PATEL: And when you mean information,
13	do you mean the first name, last name?
14	MR. GARRIE: It's whatever you're putting
15	in the user ID.
16	MR. PATEL: Yeah. The data could be
17	, for example, when we're
18	doing analysis.
19	MR. GARRIE: And what other systems can
20	access? Do you know a way of figuring out what
21	other systems can access the user ID information?
22	MR. ZARASHAW: Special Master Garrie, what
23	do you mean by access the user ID in this case?
24	MR. GARRIE: Well, if you use it and
25	extract it to right, is I guess from
	Page 106

1	what I understand is if there's a master user
2	table and then that's extracted to like a user ID
3	table, is it protected information; right? Is the
4	user ID information limited access, I guess?
5	MR. CLARK: So across all of our systems
6	MS. RING: Sorry. I just want to clarify.
7	I didn't hear anyone say a master user
8	table. I just want to be really clear what we're
9	talking about.
10	MR. GARRIE: User ID.
11	MS. RING: There's a table that has user
12	IDs, but no one I mean, I just want to make sure
13	we're being clear.
14	MR. GARRIE: Well, it's a 64-bit
15	
16	MS. RING: That's for the user ID, but
17	MR. GARRIE: Correct.
18	MS. RING: Okay.
19	MR. GARRIE: But the user ID is associated
20	with user information. No?
21	MS. RING: I don't I think what we
22	heard, there's no one here that knows exactly
23	whether that's the case.
24	I think Eugene was just saying that the
25	user ID is stored as a 64-bit. I can't even repeat
	Page 107

1	it, Eugene. I'm sorry. But I just want to make
2	sure that we're not, you know, misunderstanding here
3	what actually is being talked about, especially when
4	we're talking about then what privacy safeguards are
5	applied to it.
6	MR. CLARK: I have a caveat because, you
7	know, part of part of having as that
8	extraction layer is to manage access like for any
9	kind of data access, you know, that goes back to as
LO	engineers design systems, like they are trained in
L1	specific things that they are supposed to build,
L 2	and before we can access certain kinds of data or
L 3	have any kinds of things, those things have to be
L4	defined and mapped. And so that that mapping is
L 5	to the structure, but not necessarily the data in
L6	it, and that data is accessed as needed for the
L 7	functionality of the product.
L 8	MR. GARRIE: So then who owns the user ID?
L 9	MR. CLARK: It's no one and everyone.
20	MR. GARRIE: Well, who gets fired if you
21	lose the table?
22	MR. CLARK: Well, that's part of being able
23	to operate at this scale,
	-
25	MR. GARRIE: It's Right.
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1	Sorry. No. No. Sorry. I keep forgetting it's
2	to like where
3	So the user ID that you guys offer as a
4	definition is Facebook uses an industrywide
5	technique called pseudonymization to represent users
6	on the Facebook platform. You create a 64-bit
7	string.
8	Who owns that process? So there should be
9	a single source of truth for mapping the UID to
10	no? Isn't there a single source?
11	MR. ZARASHAW:
16	MR. GARRIE: Yeah. What I'm asking is
17	what's the single source of truth for mapping?
18	MR. ZARASHAW:
19	MR. GARRIE: But that's for every
20	that's your but
21	that's it?
22	MR. ZARASHAW: Yes.
23	MR. GARRIE: That's your single source of
24	truth?
25	MR. ZARASHAW: So if you go to
	Page 109

1	Facebook and to sign in and we go to validate your
2	password and so on, that will go from
3	MR. CLARK: If you're an engineer building
4	your primary storage interface as we talked about
5	like looking at the 95 percent case, that
6	interaction is going to be through
7	MR. GARRIE: So moving to the replacement
8	ID or the RID. It's very interesting.
9	So as long as the RID to user ID mapping is
10	not deleted, can the data in the be mapped to a
11	specific user?
12	MR. PATEL: Yes. If the account is not
13	deleted.
14	MS. RING: Okay. Sorry. Are you saying
15	all data, Mayur, all data in? Let's just be
16	really precise especially on this topic because
17	we've spent so much time on it previously.
18	MR. PATEL: Yeah. Any data associated to a
19	non-deleted user if it's stored within RID can be
20	associated back.
21	MS. RING: Right. If it's associated.
22	Again, let's just be clear about what we're talking
23	about.
24	MR. GARRIE: That's what I said. No,
25	Counsel Ring.

1	MS. RING: Okay. I didn't hear that. I
2	don't think it was phrased exactly that way. So I
3	just wanted to
4	MR. GARRIE: It was.
5	MS. RING: If that's what you meant and now
6	we're on the same page, great.
7	MR. GARRIE: So let me repeat my question
8	so there's no confusion.
9	So as long as the RID to user ID mapping is
10	not deleted, can the data in the <b>term</b> be mapped to a
11	specific user? I assume the answer is yes, which is
12	why you built it that way.
13	MR. ZARASHAW: So it's complicated because
14	it depends for a specific table what is its
15	schema.
20	MR. GARRIE: I get that.
21	I'm asking if RID to user ID is not
22	deleted.
23	What I'm saying is if that mapping still
24	exists I'm not talking about all the scenarios
25	you're talking about. I'm talking about RID to user
	Page 111

1	ID mapping is not deleted, meaning that it exists,
2	can the data in the be mapped back to a
3	specific user?
4	MR. ZARASHAW: I'd like to get a little
5	more precise about which data in the because
6	even if you
7	MR. GARRIE: Say the is
8	My question is, tables in RID columns. Not
9	all tables.
10	MR. ZARASHAW: Okay. That makes sense.
11	As long as the mapping still exists, the
12	user still exists, and a table contains an RID
13	column, yes, it can be mapped.
14	MR. GARRIE: Yeah. Okay. So all right.
15	MR. CLARK: And the 90 days is the
16	commitment for that deletion. That can happen
17	sooner.
18	MR. GARRIE: But there's no way to verify
19	across do you have processes that run across the
20	to validate, verify deletion is happening?
21	MR. CLARK:
22	MR. GARRIE: Across the entire
23	MR. CLARK: Well, no.
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1	
5	MR. GARRIE: Yeah, which you know about.
6	Yeah. You have to know about it.
7	MR. CLARK: Correct.
8	MR. GARRIE: Okay. So then moving on to
9	the SID, the separateable which, by the way, who
10	thought of that, a separateable ID? That was
11	that was I've seen a lot of people try to I
12	don't think lawyers appreciate how that's a very
13	nice that's an interesting approach.
14	So is the SID tasked in by the off-platform
15	system or is it mapped before writing data to the
16	I couldn't tell.
17	MR. PATEL: We do not receive SIDs from
18	third parties. So it would be the latter.
19	MR. GARRIE: Is then the UID passed in as
20	well?
21	MR. PATEL: Passed in where? Sorry.
22	MR. GARRIE: So is UID passed in then and
23	then you store it as the SID? Is that how that
24	works out?
25	MR. PATEL: Yeah. We match to the UID. So
	Page 113

1	this is on Facebook.
2	MR. GARRIE: Yeah, on Facebook.
3	MR. PATEL: We do not get UIDs from third
4	parties. We match to a UID and convert it to an
5	SID. Yeah. The difference is it's similar to an
6	RID. Where the RID is the lifetime of the account,
7	the SID is basically is recycled when the control
8	is executed.
9	MR. GARRIE: What do you receive then from
10	the third parties?
11	MR. PATEL: What we receive from the third
12	parties depends on the business tool. It ranges
13	from cookies to device identifiers and, in your
14	off-line conversions case, PII. Hashed PII just to
15	be clear on that.
16	MR. GARRIE: Then is it possible to
17	determine the list of tables that contain UID,
18	RID or SID as a column value?
19	MR. PATEL: It is possible.
20	And your question is for off-Facebook
21	activity specifically?
22	MR. GARRIE: Just generally.
23	MR. PATEL: Yeah. So we do have schemas
24	and developers are annotating columns in for
25	whether or not there is a UID present or an RID

1	present.
2	MR. CLARK: Individually per table across
3	many, many millions of tables. And so could we look
4	in the phone book and find Mike Clark? Yes. Could
5	we look in a warehouse of? And so there becomes a
6	technical feasibility because not all that storage
7	that sits in is online. And so that would
8	it becomes a technical feasibility challenge to do
9	that full discovery across everything.
10	MR. GARRIE: I didn't say what anybody was
11	going to do yet, but I get there are millions of
12	tables.
13	MR. CLARK: No. I was just clarifying that
14	last bit.
15	MR. GARRIE: No. I understand. I just
16	want to know if it's like is it possible and
17	whether or not it's economical or reasonable or any
18	of that. I understand that there are millions of
19	tables and et cetera.
20	Counsel Weaver, do you have a question?
21	MS. WEAVER: Yes. And maybe this is
22	further in the outline.
23	But with regard to hashed PII and
24	conversion and cookies received from third parties,
25	it might be helpful to know what cookies, if they
	Page 115

1	are Facebook cookies and if the cookies contain
2	identifiers that Facebook can decode and any
3	identifiers or cookies that are used for mapping or
4	matching purposes.
5	MS. RING: Sorry. Counsel Weaver, I didn't
6	hear the first part.
7	Cache did you say?
8	MS. WEAVER: He said hashed PII.
9	MS. RING: Hashed. Thank you. Okay.
10	MS. WEAVER: Like corned beef.
11	MS. RING: Got it. Okay. Got it.
12	I don't know if any you know, the people
13	that we have here today focus on those things. I
14	don't think so. So
15	MR. PATEL: Yeah. I'm not a measurement
16	tabs engineer.
17	MR. CLARK: I wouldn't be able to speak to
18	that either.
19	MR. ZARASHAW: I wouldn't either.
20	MR. GARRIE: You've got to you've got to
21	weigh in here, Ben. You got to turn mute off.
22	MR. MITCHELL: Sorry.
23	I can't speak to that either. I didn't
24	realize that was actually an explicit question.
25	Sorry. No.

1	MR. GARRIE: Your counsel is making a
2	point. So I just wanted everybody to answer.
3	Okay.
4	THE COURT REPORTER: Mr. Garrie, whenever
5	it's convenient, can we take a break?
6	MS. WEAVER: Of course. We'll take a
7	10-minute break. We'll go off the record.
8	(Recess taken.)
9	(Off the record at 1:09 p.m. Back on the
10	record at 1:31 p.m.)
11	MR. GARRIE: Back on the record.
12	So question five. Starting with TAO, my
13	first question is, is there documentation of TAO
14	objects and associations and their schemas?
15	MR. ZARASHAW: In this case, TAO is
16	self-documenting like a lot of the code in that we
17	look at the definitions of the TAO schemas inside
18	TAO itself as the documentation. The challenge is,
19	otherwise, documentation tends to drift and not get
20	updated in time. So the systems get updated,
21	schemas and TAO will get updated; but if we have
22	separate documentation, it would never be up to
23	date.
24	MR. GARRIE: But there is documentation of
25	the objects and associations and their schemas.

1	They're not embedded there.
2	MR. ZARASHAW:
5	MR. GARRIE:
6	MR. ZARASHAW:
10	MR. GARRIE: Is there a key?
11	MR. ZARASHAW:
17	MR. GARRIE: How many tables are there in
18	TAO?
19	MR. ZARASHAW: I do not know the answer.
20	Anybody else?
21	MR. PATEL: I do not know offhand.
22	MR. CLARK: I do not.
23	MR. GARRIE: So then
24	MR. ZARASHAW: It's one of those things
25	where every product team very similar to Hive,
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1	any product team can just go and create one.
2	MR. GARRIE: So then how many systems
3	well, this comes to my next question, which is how
4	many systems how many systems write data to
5	individual objects and/or associations? Like how
6	many systems create posts or so on and so forth?
7	MR. ZARASHAW: I would this would be a
8	complete guess, but I would guess
12	MR. GARRIE: So is there a comprehensive
13	list of the systems that write to TAO?
14	MR. ZARASHAW:
15	MR. GARRIE:
	I
18	mean, we can start broadly or we can get specifics.
19	MR. ZARASHAW:
	to download all your information.
22	MR. GARRIE: But, I guess, do the systems
23	have their own storage as well in using TAO, I
24	guess?
25	MR. ZARASHAW: To my knowledge,
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22	Effectively, it's a way of giving you
distr	ibuted database like storage, graph database
	storage that automatically scales to a very
high	level without the product engineers having to
think	about the scaling challenges at all.
	MR. GARRIE: Is the data in the DYI file
subse	t of data in TAO?
	MR. ZARASHAW: Mike? Mayur?
	MR. CLARK: I'm trying to get that.
	for as you deem
more	to the example of this is where
į	
	MR. ZARASHAW: Blob storage; right?
	MR. CLARK: That is correct.
	MR. GARRIE: Okay. So

1	Mayur?
2	MR. PATEL: Oh, all right. So I guess for
3	it's just a storage system that lives
4	under Right. It's really you know, the IDs
5	that you have for that photo are accessed through
6	and eventually pulled from
7	MR. GARRIE: And is TAO cued to UID?
8	MR. ZARASHAW:
12	MR. GARRIE: So then can you describe
13	Ent schema and Node? I didn't quite understand how
14	that's operating.
15	MR. PATEL: You're on mute, I think.
16	MR. CLARK: That will definitely not get
17	reported if I talk on mute.
18	Ent and Node are software frameworks and
19	they're software frameworks that are specifically
20	built to help identify what kind of data can be
21	accessed. Ent and Node depend on schematization of
22	a data system in order to know how to operate and
23	interact with it. The instruction per table
24	MR. GARRIE: How do you
25	MR. CLARK: Sorry.

1	MR. GARRIE: Maybe a different way then.
2	How does someone use Ent schema if I'm an
3	engineer, concrete example, or Node?
4	MR. CLARK: So I'll finish explaining what
5	they are because that will help you explain how an
6	engineer might use them.
7	So, for instance, details about what can be
8	accessed are included in that schema and Ent and
9	Node as software frameworks are what enforce that.
10	Ent is used specifically for the hack programming
11	language and Node is for all the other programming
12	language that we have at Facebook.
13	And so I, as a developer, when I go to
14	write something, if I'm using one of the existing
15	software frameworks, they automatically integrate
16	with Ent and Node; but also as part of privacy
17	programming training, if I'm writing from outside
18	of one of the existing frameworks, I'm required to
19	use Ent or Node in accessing the data and it makes
20	that determination.
21	Eugene or Mayur, anything else you'd add?
22	MR. PATEL: Yeah. There is a set of
23	privacy rules that you also set, like who can view a
24	piece of content as well as the deletion rules on
25	how a piece of content is deleted.

1	So, for example, if you have a comment on a
2	photo, if you delete the comment, you shouldn't
3	delete the photo, but you should delete any comments
4	that were below the comments or like, I guess if you
5	look at it in a tree, comments that were for that
6	comment, not comments that were associated to the
7	photo specifically, and those rules are then defined
8	in the schema in that Ent schema Node.
9	MR. GARRIE: What would be a tangible
10	engineering example of how they use it?
11	MR. CLARK: It's built in so that they
12	don't have to think about how to apply the privacy
13	controls and other elements. I don't have to
14	understand all of the underlying storage or
15	everything that's there. It takes care of that for
16	me. So I don't have to specific call those. It's
17	done with every call, if that makes sense,
18	Special Master Garrie.
19	MR. GARRIE: Yeah, but I need like
20	real-world examples of how it's actually used
21	because I don't understand conceptually, like, how
22	you use it as a developer to manage user data. Like
23	I don't quite understand.
24	MR. PATEL: An example of this is if you
25	created a schema for photos that people upload, you
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would be required to implement the can see function. And I'm not sure if that's exactly the function, but like can see, we can just assume it's whether or not a user looking at the piece of content can actually view the content. So an example of how you would write it is the author of the content, the photo, so if user ID is equal to the person who created it, great, show on the piece of content. And then you would go down the privacy settings of the photo. Are we allowed to show it to your friends? Are we allowed to show it to the public? Are we allowed to show it to your friends of friends? And that would have to be implemented in that can see function, and so it's a requirement that we enforce these calls. MR. GARRIE: And you enforce it using -like so then -- so let's say that user ID equals this person, show them this content, and then so where does Ent schema and Node come into this?

MR. PATEL: Yeah. You could think of it like if somebody were accessing the data directly that would be a problem. We wouldn't from check the privacy rules, obviously. So to make it scaleable, you have to go through Ent schema. that's a requirement.

1	MR. GARRIE: Ent schema is a way to access
2	data. And so getting past all the privacy,
3	whatever, Ent schema is a way to access the photo?
4	MR. ZARASHAW: If I may, it's a privacy
5	preserving ORM layer.
6	MR. PATEL: Yeah. That's a good way to
7	frame it.
8	MR. ZARASHAW: It's an ORM layer on top of
9	a very raw data storage that is the graph database
LO	provided by TAO. TAO itself would not implement the
L1	privacy checks and the conflict logic of, let's say,
L2	if you make a comment on a post, understanding that
L3	you, as the author, are able to delete that comment
L4	and the author of the original post has the right to
L5	delete the comment, but no one else has the right to
L6	delete that comment. There are a tremendous number
L7	of rules like this all over every Facebook product
L8	and surface that it would be very error prone to
L9	have developers implement repeatedly.
20	So it's an ORM layer that lets you query
21	the data in TAO and write data to TAO, but
22	implementing all the privacy rules underneath. So
23	no individual developer is not working on it.
24	MR. GARRIE: Got it. That makes sense.
25	All right. That makes sense.

1	Okay. So then is Node the same?
2	MR. PATEL: Yeah. Correct. Node is the
3	same. It's just a different language.
4	MR. GARRIE: It's for all the other ones, I
5	guess. All right.
6	So then does Plaintiff have any questions?
7	MS. WEAVER: I think we're okay.
8	MR. GARRIE: So then MySQL, what
9	associations well, what associations or objects
10	from TAO does MySQL store? I didn't quite
11	understand that.
12	MR. ZARASHAW: All of them. It is under
13	it is the backing store for TAO and we would need to
14	get a TAO expert into the room for the details, but
15	for every every piece of data that is stored in
16	TAO is actually being stored in one of thousands and
17	thousands of MySQL servers distributed globally and
18	usually on more than one of them, and any schema
19	updates to TAO match to some schema changes on those
20	MySQL servers. So those MySQL servers are not
21	generally used directly and they are used through
22	TAO.
23	MR. GARRIE: I really like that ORM layer
24	explanation. That cleared up a lot.
25	All right. So MySQL.

All right. So then is there a
type of data stored in
images or text like JSON objects?
MR. ZARASHAW: It's meant for so TAO is
not efficient at storing large chunks of anything,
binary or text. So once you get over a certain
limit that I don't remember what the latest limit of
MySQL is, last I saw it was 64K, MySQL performs very
poorly.
The point of
MR. GARRIE: So then if there's JSON data
in can it contain user data?
MR. ZARASHAW:
MR. GARRIE: Right. And then it would be
Got it.
MR. ZARASHAW:
and
the developer would not have to think about it.
MR. GARRIE: So is there a list of
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1	MR. ZARASHAW: I'm out of my depth here.
2	Mayur?
3	MR. PATEL: We would have to go look at the
4	configuration and see if that's possible to pull up.
5	Again, that's out of my expertise as well.
6	MR. GARRIE: Okay. Zippy. The Zippy
7	database and Akkio, do you know what associations or
8	objects from TAO that Zippy or Akkio stores?
9	MR. ZARASHAW: I do not know.
LO	MR. PATEL: I do not know. We generally
L1	understand how Zippy operates.
L2	MR. GARRIE: Is Akkio used for it says
L3	it flips the datasets into units with strong
L4	locality, meaning geographical locality?
L 5	MR. ZARASHAW: Data center locality in this
L 6	case.
L 7	One of the challenges where we say is we
L 8	have many data centers globally, and any time a
L 9	transaction needs to be replicated to all data
20	centers, it's far more extensive than it would be
21	locally.
22	MR. GARRIE: So then that's geographically
23	placed close to where there, most likely, would be
24	access. Okay. Makes sense.
25	MR. ZARASHAW: Exactly. What I mean by
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1	extensively is latency. It takes a long time to
2	commit or write across the continent; but if you
3	only care about coming back to the same data center,
4	it would create a better user experience.
5	MR. GARRIE: And I read through the
6	documentation. Memcache made sense to me. I got
7	that.
8	Laser, do Laser indexes point at the Hive
9	and make the Hive query?
10	MR. ZARASHAW: It's the other way around.
11	So a job will run. So Dataswarm jobs can have a
12	source and a target. So a source for Dataswarm in
13	this case would be Hive. It would run a set of
14	queries or custom code and the target would be
15	Laser. So that job would then populate a Laser tier
16	with the results of a Hive query that could be
17	the result being potentially quite large.
18	There are other ways to populate Laser as
19	well. It does not have to be from Hive. It could
20	be done from a shelf script if the developer chooses
21	to do so. It could be done from any code that's
22	written, but the common use case would be run an
23	extensive query in Hive and put the results in Laser
24	for very fast lookups of specific rows.
25	MR. GARRIE: And Laser has storage

1	basically.
2	MR. ZARASHAW: It's a cache. It's a cache
3	for storing a precomputation of a large dataset when
4	you only ever want to access a small subset of that
5	dataset.
6	Hive doesn't really offer the ability to
7	access one row. Every operation in Hive ends up
8	touching the entire table and this is one of the
9	challenges we run into any time we are looking for
10	There's no way in Hive to just
11	quickly grab a subset of the table in Hive. Every
12	single lookup in Hive is a scan of the entire file,
13	of the entire table. It involves the same amount of
14	time to look at all of the data in Laser as to just
15	one row.
16	MS. RING: Special Master Garrie, if I may,
17	actually I forgot that on a break it was asked, they
18	wanted to clarify something that had been talked
19	about about and
20	what it would take to find the data in the tables in
21	
22	I think, Mike and Mayur, you guys wanted to
23	clarify.
24	MR. CLARK: Well, I think it was in
25	connection to Laser. Like Laser has very specific
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1	mapping and, as Eugene just walked through, that's
2	why that one-to-one mapping makes it much more
3	efficient.
4	There is the challenge of when we go to
5	look for things broadly in Hive across tables and
6	where we don't have that preexisting application or
7	dataset mapping, that finding it, and I used the
8	analogy earlier, but not just looking in one phone
9	book or a couple phone books, it's the many
LO	warehouses of phone books with millions and millions
L1	of them trying to find the same info.
L2	MR. GARRIE: So I get that.
L 3	You guys have five million you run
L4	through five million every night, every day. On
L 5	one day you ran through five million. So it's not
L 6	like you don't have the computational capacity to
L 7	run it.
L 8	MR. CLARK: But that's only the
L 9	computational capacity to map it.
20	What is the challenge is most of it's not
21	actually in warm storage, and so to actually
22	MR. GARRIE: Well, there's a whole so
23	there's a whole separate Hive conversation about how
24	it goes
25	MR. CLARK: Okay. Yeah.

1	MR. GARRIE: outside. There's a Hive
2	specialist because there has been a prior
3	conversation about different tables in Hive and how
4	it's in cold storage and it's compressed and zipped
5	and it's a pain to access and all of that. I
6	assume nobody here has that domain specific
7	expertise.
8	MR. PATEL: We don't have the expertise.
9	We have the general understanding of
10	MR. CLARK: Yes.
11	MR. PATEL: like cold storage and how it
12	operates.
13	MR. GARRIE: I've read I mean, there's a
14	lot of previous advocacy around it.
15	MR. CLARK: And the only thing I saw
16	missing in the advocacy was just the amount of time
17	to then manually map all that.
18	MR. GARRIE: Oh, no. They explained that.
19	MR. CLARK: Okay. I didn't know. The
20	stuff I read didn't have that. So apologies,
21	Special Master Garrie.
22	MR. GARRIE: They probably spared you.
23	There was a whole other path that was resolved
24	around tables in Hive to tables in Hive and so on.
25	So I'm fairly familiar with the amount of cold

1	storage sharing on a daily basis and how that's
2	zipped and you have to unzip it and query it.
3	MS. RING: Special Master Garrie, look, I'm
4	sorry to interject again, but we want to really help
5	you understand this and I think you're thinking of a
6	different issue. I've read all that documentation
7	also.
8	When they were telling me this on a break,
9	this is a distinct issue, which after it's pulled
10	then it has to be reviewed, which I don't think
11	we've addressed in prior submissions.
12	But if you don't want to hear about it, I
13	mean, it is an important part of the process for
14	being able to actually I mean, you know, Mike,
15	this is
16	MR. CLARK: It's the longest amount of
17	time. Like it's it could take X amount of time
18	to pull it, then it's X time to review it because it
19	is manual because there isn't just a simple way to
20	go technically audit what each of those tables were
21	to then know how they were mapped.
22	MR. GARRIE: That's one big for loop and
23	then someone has to put eyes on the output.
24	MR. PATEL: It's not just one big for loop.
25	Right.

1	MR. GARRIE: I'm generalizing, but I get
2	it. I get it.
3	MR. PATEL: It's a for loop with a whole
4	bunch of technical constraints around, you know, how
5	much cold storage we can move to warm on a single
6	day. It's not that we can move our entire cold
7	storage into warm storage.
8	MR. GARRIE: No. I get that. It's only
9	one day.
10	MR. PATEL: Yes.
11	MR. GARRIE: So I get there's a lot of
12	infrastructure issues because you move it to cold
13	storage, and then you'd have to move it out of cold
14	storage and then compress it, restore it, and that
15	takes quite a bit of time before we even get to the
16	search and all the other pieces of it.
17	MR. ZARASHAW: Sorry. Just one last thing
18	on this point.
19	It's not just a matter of time. It's that
20	we simply don't have enough hard drives to store
21	additional to pull data out of cold storage
22	without first deleting data that's already in warm
23	storage that's being used for production.
24	MR. GARRIE: Yeah. I get it. I mean, that
25	was delivered to me in the last train of thought we
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1	had, which is why I granted the relief sought by
2	Facebook at the time. So, yeah, I get that. I
3	mean, of data isn't chump change. So,
4	you know, that's
	Okay. So I fully grasp the
7	magnitude of what we're talking about.
8	I mean, before we get down there, I will
9	return to that conversation, Counsel Ring, and
LO	please bring it back up again. I just want to
L1	finish my train of thought to what we have.
L2	I have specific questions about the product
L3	management process and specifically how that works.
L4	But before I get to that, what so I
L 5	think what you were saying what data does Laser
L6	index and I just want you to repeat it one more
L 7	time.
L 8	MR. ZARASHAW: I think it might help if I
L 9	contrast Memcache and Laser because they serve a
20	very similar purpose, but used in two different
21	ways.
22	I'd classify Memcache as a reactive cache
23	in that you do an extensive computation and then you
24	store the single result of that computation in
25	Memcache so that if you within a time period have to

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1	do that computation again, it is available for fast
2	access.
3	Laser is more for cases where you cannot,
4	on demand, do that computation. Instead, you do
5	that computation, let's say, once a day in bulk on
6	the entire Facebook user base, so the entire set of
7	an object type and so on, and then you commingle
8	all of it because the amount of time to do the
9	computation for one item is almost the same as to do
LO	the computation for the entire universe.
L1	So Laser is more of a proactive cache where
L2	we will do the extensive computations once in a day,
L 3	we'll load it into a Memcache-like tier and allow
L4	randomized access to the sub-results of those
L 5	computations.
L6	MR. GARRIE: That makes sense. Because it
L 7	says Laser is an indexing service, but it also has
L 8	storage.
L 9	MR. ZARASHAW: Laser is effectively a set
20	of Memcache-like machines plus infrastructure to
21	run most of the time run a Hype query and load up
22	the results. So the storage is ephemeral.
23	MR. GARRIE: Okay. So then how is Laser's
24	use restricted to putting first-party only products
25	if Graph API uses Laser to access the data?

1	MR. ZARASHAW: There is no direct access to
2	Laser. So it would have to be through Graph API. I
3	don't know which specific APIs use Laser, but it
4	would be similar to Memcache where Memcache would be
5	used when a specific API can't be fulfilled quickly
6	by getting MySQL or TAO directly.
7	MR. GARRIE: And then are there private
8	internal-only Graph APIs between the two?
9	MR. ZARASHAW: It would not be a Graph API.
10	Graph APIs are externally available. So Laser
11	offers up a drift service for any
12	MR. GARRIE: Right. If Laser is restricted
13	to supporting first-party only products and if
14	Graph API uses Laser to access the data and it's not
15	done, how does that work?
16	MR. ZARASHAW: So I'm sorry.
17	MR. CLARK: Sorry.
18	Mayur, didn't you have a good example of
19	like the OFA process, for instance? Maybe going
20	through a concrete example might actually be helpful
21	in this case.
22	MR. PATEL: I am actually confused with the
23	question. So if the question can be repeated.
24	MR. GARRIE: Yeah. So let me explain as I
25	understood it and then maybe I'm completely wrong,

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1	which is possible.
2	So then Laser's use is restricted I thought
3	to supporting first-party only products.
4	MR. ZARASHAW: That is not correct. We
5	don't think about pieces of infrastructure as
6	designed for first or third-party products. We have
7	an API model for all third-party interactions
8	happening through a set of external APIs, but then
9	each API has product specific implementations
10	because the API is very broad and many of the
11	products we offer have their own APIs and then each
12	API implementation may use different types of
13	storage to accomplish the product outcomes of that
14	API.
15	MR. GARRIE: Okay. So it doesn't really,
16	frankly, matter. Okay. All right.
17	Question six, my question is more about the
18	product process.
19	In the product process, how do these
20	agreements how do agreements get made? I still
21	haven't been able to figure this out.
22	Like, you have products and then they sign
23	agreements with the customers for the products. So
24	Microsoft, whoever. You build a product.
25	Like Facebook builds products and then there are

1	agreements with customers to use features of the
2	products.
3	So what I'm trying to understand is what's
4	the sequence of how that works and then if they're
5	customer specific driven products or projects.
6	I just started reading over some of the
7	agreements. So I'm not exactly sure.
8	MS. RING: So we really don't have someone
9	on here who focuses on that. I mean, I think
LO	there's like a business tool and they're subject to
L1	standard terms.
L 2	MR. GARRIE: Well, no. That's my question.
L 3	So that's my question.
L 4	You have products that you build and
L 5	there's a set of how does this like I'm a
L6	business. I want to use your products.
L 7	MS. RING: So, I mean, look, we don't have
L 8	anyone on this call that deals with that exactly.
L 9	I think if it's something if it's a
2 0	business tool and it uses a standard app, you know,
21	they just sign up and use it and it's subject to the
22	standard terms.
23	I don't know for this specific. You know,
24	we provided contracts for Microsoft,
25	I don't know the process that's followed
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1	and I can say who cares what I know, but we didn't
2	bring anybody who knows that process.
3	MR. GARRIE: And all I'm trying to figure
4	out is the pro I get the products.
5	What I'm trying to figure out is these
6	agreements, are the products I'm trying to figure
7	out if there's a process for where products may be
8	tailored, customized, whatever, for a particular
9	customer and if there's a process, a product
10	development process for that. You usually get a
11	project program. Like usually there's a in most
12	places there's a project manager. There's a product
13	and there's a project manager assigned to build that
14	out to meet the requirements to tailor that specific
15	need or whatever.
16	Just at a high level for those products, is
17	there a standardized process that's followed?
18	MR. CLARK: At just the highest level, like
19	just to walk through this, there are the primary
20	products. There is the third-party developer
21	platform, the business products that we've already
22	spoken about. For any changes to any of those, they
23	go through both the
	for those checkpoints.
25	MR. GARRIE: But there are agreements that
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1	are made with clients like <b>control</b> or with
2	Microsoft, for example.
3	MR. CLARK: And that's where I can talk to
4	the example overall. And when there are specific
5	individual products, I am not an expert in that.
6	MR. GARRIE: But my question is, are they
7	handled my it's just a broad question and
8	that's all I have for question six is, is there a
9	broad process for when a customer, a third party,
LO	Microsoft, Amazon, comes and says we want to do
L1	we're a big boy sitting at the big boy table,
L2	right I have a six-year-old, so it's a
L 3	commonly-used phrase in my house and they want
L4	certain things. Right. You know, I want my red
L 5	cup. I want my whatever it is and there's a
L6	process, you know, that is followed.
L 7	And my question is at Facebook, what I'm
L 8	trying to figure out, is there some process that's
L 9	documented as to how this is done for you know,
20	because it's involving like if you look at
21	Microsoft, there's user information going back and
22	forth all over the place.
23	Is there a process that's followed for the
24	product that's documented to build it out generally?
25	MR. CLARK: They follow the same process.

1	They follow the same
2	There is a specialized business development
3	team that works on the contracts side and with the
4	product teams, but that is as far as this goes.
5	They follow the same types of constraints and
6	controls and usage of data that all of the other
7	teams do as part of the overall program.
8	MR. MITCHELL: There are no exceptions to
9	our standard development process or deviations.
10	MR. GARRIE: That's basically what I'm
11	getting at.
12	MR. MITCHELL: Yeah. We have a common
13	development process that is utilized by, you know,
14	sort of all products and they all go through the
15	and, you know, they'll go
16	through all the gates we've discussed at various
17	points over the course of today and there's no
18	exception because you're Microsoft or and
L 9	you're a big boy.
20	MR. GARRIE: That's why I'm asking because
21	there's a whole discussion of private APIs and
22	everything else, but it follows today it follows
23	that process.
24	When did this process get in place?
25	MR. CLARK: I can't speak to the exact

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1	MR. GARRIE: I mean, that makes sense given
2	the amount of data that's being collected.
3	I guess now that I understand a little
4	better, is a query to build experiences assuming
5	you're using, like, Laser? Is that how that works?
6	MR. ZARASHAW: I'm not sure I understand
7	the question.
8	MR. GARRIE: So how are you querying I
9	think I
10	Never mind. You've already answered the
11	question. Because Laser is like Memcache. It's
12	indexed and it's targeted so you can then okay.
13	So then is there any clear delineation of
14	any of the Hive data resources that are used in
15	products? Is there a table key or something like
16	that? Not for 100 percent.
17	MR. ZARASHAW: Not that I know. Mike?
18	MR. CLARK: No. And nothing comes directly
19	to Hive. It would because it's just wait and
20	see. It's like it's optimized for writes and not
21	for reads and, from a product experience
22	perspective, it would need to go through one of the
23	other layers or some other transformation in order
24	to be usable in a product experience.
25	MR. ZARASHAW: Actually that's a really
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1	good point to call out, Mike.
2	Special Master Garrie, on a given as of
3	about
	It is not anywhere
5	near real time. So at any point it takes somewhere
6	between
	So it would
9	not work for any production data use that would
10	require us to read data back after writing it.
11	MR. CLARK: You, as a product engineer,
12	would start with and most of the time end with
13	
14	MR. GARRIE: All right. So then okay.
15	So then on Exhibit B, which, by the way, was
16	helpful, the last row on Page 3 says other datasets,
17	that Facebook occasionally acquires datasets to help
18	inform different user models, blah, blah, blah.
19	Do you see where I'm at?
20	MR. PATEL: Sorry. Which page is this?
21	MR. GARRIE: Page 3, last row.
22	MS. RING: So, yeah. This is
23	MR. MITCHELL: Page 41 in the pdf.
24	MR. GARRIE: Yeah.
25	MS. RING: Okay.
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1	MR. CLARK: Found it.
2	MR. GARRIE: My question is, while
3	data is not user specific, implications derived from
4	data would be or is or can be.
5	So what are the data points that are
6	stored? Like where are they stored?
7	MR. PATEL: Do you mean stored with the
8	user at a user level granularity?
9	MR. GARRIE: Derivation from the
LO	data. You're deriving data from the data.
L1	Where is that data stored?
L2	MR. PATEL: Which system are you talking
L3	about? Because then we'd probably need an admin
L4	engineer to describe like where that data
L 5	eventually
L6	MR. ZARASHAW: It's like a lot of other
L7	situations where the life cycle is usually figuring
L 8	out what use case we're trying to come up with.
L 9	Then a product team decides a use case should exist
20	in the world. They go build the use case, which
21	may include acquiring a third-party dataset. Then
22	for the use case they're trying to hit usually based
23	on the read and write patterns, they'll pick the
24	piece of infrastructure or system that makes sense
25	for that use case. And so there's no general

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principles for where it should be stored, other
 1
     than what makes sense for the specific project.
 2
              MR. GARRIE: So I quess my follow-up
 3
     question to that is, are these implications included
 4
 5
     in the DYI file?
              MR. PATEL: The implica- -- if you're
 6
 7
     talking about the ads targeting criteria, they are
     in DYI.
8
9
              MR. GARRIE: I'm talking about any of the
     data.
            Well, no. You said ads. I'm saying any of
10
11
     the --
12
              What I'm being very clear about is derived
13
     from the data because you say there's, you
     know, other datasets and you reference the
14
15
     data. I'm saying you can derive data from that
16
     information and my question is, is the derived
     information that you get from that stored or made
17
     available in the DYI file?
18
              MS. RING: Excuse me, Special Master
19
     Garrie.
20
              I mean, Mr. Patel, this is -- we talked.
21
     This is -- this column is -- this column is
22
23
     referring to something very specific, which is ad
     targeting options based on income. Those are in
24
25
     DYI.
```

1	So, Mr. Patel, I mean, can you just
2	describe I think it would be helpful to describe
3	this is just an ad targeting option that is created
4	using data we get and that is in the DYI file
5	and people can X out of it, et cetera.
6	MR. PATEL: I mean, you have transparency
7	and control in your ads preferences as well into
8	this.
9	MS. RING: Maybe it's actually
10	MR. GARRIE: Well, let me make it simpler.
11	Where might it be that I'm rich stored?
12	Where is it stored? I mean, I guess that's what I'm
13	trying to figure out. Right.
14	MS. RING: In your DYI file. I looked mine
15	up and I'm apparently not rich. My ad targeting
16	option was actually for a low like a low
17	percentage based on my zip code, I guess. So
18	MR. PATEL: Yeah. Special Master Garrie,
19	I don't know that answer because it's the ads
20	targeting product team that would know exactly where
21	this is stored. Like, I can just speculate where I
22	would store it, but I cannot tell you for sure.
23	MR. GARRIE: And then because one thing I
24	noticed looking at the APIs, you require data to
25	be just returning back to a prior conversation.

1	In some of the API functions, you require
2	it to be in there and you don't necessarily produce
3	that data in the DYI file every single time and
4	there's there are specific elements, but do you
5	have data elements? Like, for example, the
6	Luluemon, you require there to be a value put in
7	there, but it doesn't mean that it will necessarily
8	be returned to the DYI file at least based on the
9	documentation that I looked at.
10	MR. CLARK: I believe, and I'll go back and
11	reiterate what we'd stated before. And you broke up
12	for just a moment in the question, so I want to make
13	sure I'm answering this right.
14	The only required fields are the, you know,
15	time and date stamp that comes in, the event type,
16	and we share that back. There are custom fields
17	that the third party, the business product user
18	company, individual can apply on their own and that
19	is the content that to us is not directly mapped.
20	If they map a page to you, if they map an initiate
21	checkout, those are things that are specifically
22	mapped and meaningful.
23	MR. GARRIE: Okay. I get it.
24	So then what are the other sources of data
25	that Facebook draws implications from?

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1	MS. RING: I think you cut out for me, at
2	least. I couldn't hear. It sounded like there was
3	an echo.
4	MR. GARRIE: What are other sources of data
5	that Facebook draws implications from?
6	MR. ZARASHAW: I think we would need to get
7	somebody from the ads targeting team to answer
8	that.
9	MR. GARRIE: Yeah. It sounds like the ads
10	targeting team will be they will be able to speak
11	to the use of cookies that aren't the user, the
12	identifiers, but are different cookie types as well
13	as this area. But, otherwise.
14	And then my last question, on Exhibit C can
15	you just explain to me the last two sentences in the
16	opening paragraph?
17	MR. CLARK: On the spacer page that says
18	Exhibit C?
19	MR. GARRIE: Yeah. In the opening
20	paragraph on Exhibit C. I just didn't understand
21	it.
22	MR. CLARK: Is that a question for us, the
23	engineers, or is that a question for the legal
24	team?
25	MR. GARRIE: The legal. I mean, whoever is
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1	best to answer it. I have a feeling the legal team
2	may, but I don't know.
3	MS. RING: I'm sorry. Can you repeat the
4	question? I didn't I couldn't I'm going out.
5	I don't know if it's mine.
6	MR. GARRIE: The last two sentences in the
7	opening paragraph.
8	MS. RING: Of what page?
9	MR. GARRIE: Exhibit C.
10	MR. MITCHELL: Page 42.
11	MR. CLARK: Is it the thing that says, "On
12	3 DYI includes data that as a factual matter"? Is
13	that what you're referring to?
14	MR. GARRIE: Yeah.
15	MS. RING: What does that mean?
16	MR. GARRIE: Yeah.
17	MS. RING: It just means that inference is
18	not a defined term, and so it has legal meanings in
19	certain contexts and we're just talking about as a
20	factual matter.
21	Like in the table we just looked at at the
22	bottom, those are ad targeting options. Those are
23	in DYI. They're derived from the data and zip
24	code and that's it. And so it's just to say like
25	that's just derived data.

1	MR. GARRIE: Okay. And then we need to
2	talk to someone on the ads team, it sounds like, to
3	determine what else besides and how that
4	flows.
5	MS. RING: For ad targeting? Like the ad
6	targeting?
7	MR. GARRIE: Yeah. Besides in
8	Exhibit B.
9	MS. RING: Yeah. I mean, just to be you
10	mean you mean ad targeting, all those options are
11	in DYI, but you want to know where they're stored
12	within
13	MR. GARRIE: But, more importantly yeah.
14	But, more importantly, what is stored when they're
15	providing what data do they get and then what
16	data is going in the DYI? Is it one-to-one or is it
17	a
18	MS. RING: It's based the ad targeting
19	options are derived from on-platform activity, and
20	then the targeting option goes into DYI. I'm sure
21	it's stored somewhere else for use in advertising,
22	but is that the so that's the question?
23	I think and, Mayur, you just don't know the
24	answer to that because you're not on the ads team.
25	MR. PATEL: Yeah. I don't know where it's
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1	stored, which specific system.
2	MR. GARRIE: And I have a couple other
3	questions there, but I need to think over the
4	answers that were given before, but I can give them
5	in writing. I have a couple scenarios; but rather
6	than go through the scenarios now, what I'm
7	thinking I'll do is I'll provide Facebook a set of
8	scenarios to explain the specific outputs of where
9	data goes.
LO	MS. RING: I'm sorry. You cut out at the
L1	end. What did you say? What was the end part of
L2	what you said?
L3	MR. GARRIE: I'm going to provide a set of
L4	scenarios, in all likelihood. I had them written
L 5	here. Like Plaintiff suggested some, but I actually
L6	have my own. But I don't think it it would
L 7	probably take all day to go through the scenarios.
8 .	So rather than taking everybody's time to
L 9	go through them, I was thinking about putting the
20	scenarios in writing and letting you guys provide
21	written answers explaining, you know, what data is
22	being collected and where is it going rather than
23	doing it now.
24	MS. RING: That would make it interesting.
25	MR. GARRIE: It wasn't nearly as yeah.
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1	But, anyways, that's what I'm thinking we'll do
2	rather than doing it in real time right now trying
3	to figure it out, but give you guys a certain time
4	to just review and then give the written answers.
5	Has anybody ever run a disk between TAO and
6	the DYI file?
7	MR. PATEL: I have not. I don't I don't
8	think we can. Like, they're two different schemas.
9	MR. GARRIE: You'd have to map them, but
10	you could.
11	All right. I think that covers most of my
12	questions for today, and I think my preference is
13	to provide the written and additional follow-on
14	questions rather than continuing forward.
15	I may have one last I need to review
16	what was covered today. We covered a lot, but
17	there's certainly some further conversations about
18	the Hive and the advertising, the cookies and how
19	those like you have a range of cookies, how are
20	they incorporated and used into the system.
21	I understand the systems part now. Now I
22	need the data piece on that. Nobody here can speak
23	to DATR cookies or any of the other cookies that are
24	used?
25	MR. PATEL: Sorry. Which cookies are you
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1	referring to specifically?
2	MR. GARRIE: There's on-platform Facebook
3	cookies, and there's third-party cookies, and then
4	there are subsets of those as well. I mean, we can
5	run through them if you want, but I didn't think
6	that the DATR cookie.
7	MR. PATEL: Yeah. The DATR cookie is
8	primarily used for security purposes. It's to
9	understand whether or not you have previously logged
10	in and the primary purpose to whether or not you've
11	primarily logged in on that browser. So it
12	identifies a browser. And so if you try to log in
13	again sorry. If you try to log in the first time
14	with a new DATR cookie, we may checkpoint you there
15	and ask for a confirmation through email or phone in
16	order to continue to log you in. And then if you
17	log out and log back in with the same DATR cookie,
18	we may not ask you again. So that's the reason for
19	the first-party cookie that we have.
20	MR. GARRIE: No. My question was
21	different.
22	Why is it in the DYI file and not other
23	cookies? I understood what it did. We spoke
24	previously about it.
25	MR. PATEL: Oh.

1	MR. GARRIE: My question was more, why is
2	that cookie put in the DYI file and who's making
3	the decision about what cookies are going into the
4	DYI file, what are all the cookies you're capturing
5	and storing in the Hive, how are they associated
6	with the users, and how are they being shared and
7	aggregated to third parties?
8	If you guys can speak to that, we can get
9	into it; but if not, I won't recommend it.
10	MR. PATEL: No.
11	MR. CLARK: No. That is one we would need
12	to get some additional folks engaged with.
13	MR. GARRIE: No. I mean, so I got what
14	it's used for. I'm just trying to figure out why
15	some cookies are. Like, there's a lot of cookies
16	that exist in the world, like a lot, and a user will
17	have many. And so how are they what and how is
18	being captured and utilized and passed and shared
19	back and forth and utilized?
20	So I figured I'd table that. So that I
21	have follow-on. I may have follow-on at one single
22	hearing to cover the Hive and those issues, and then
23	send you the scenarios is what I'm thinking.
24	But before I wrap it up, Plaintiff, do you
25	have any questions?

1	MS. WEAVER: No. I think this has been
2	very, very helpful and I think it would be useful
3	for us to read the transcript and be thoughtful
4	before following up.
5	But I wanted to thank everybody, thank
6	Facebook and all of the engineers who came to try to
7	educate us today.
8	MR. GARRIE: Yeah. So thank you to
9	Facebook. Thank you to all four engineers for
10	taking time out of your very busy day. I know the
11	lawyers have their jobs, but your job is not to,
12	per se, participate in these proceedings on the
13	regular. So I really appreciate you taking the
14	time out of your day and the time to prepare to
15	answer these questions and I wanted to thank you for
16	making yourselves available. It was extremely
17	informative and helpful. And I hope we don't talk
18	again; but if we do, then hopefully it will be as
19	instructive and as useful as this time. So thank
20	you all very much.
21	And do we need to do anything,
22	Court Reporter, before we dismiss everybody off the
23	record or anything like that?
24	MS. RING: I think Mr. Solanki is trying to
25	say something.

1	MR. SOLANKI: Sorry. I may have missed
2	this.
3	We had talked, I think, in the last hearing
4	about just designating it as highly confidential
5	given the amount of information that's been
6	disclosed about our systems. So you may have done
7	that already. But if not
8	MR. GARRIE: I did not. I did not.
9	So he's 100 percent correct. This is
10	highly confidential and should be designated as
11	such and treated accordingly.
12	THE COURT REPORTER: Okay.
13	MS. RING: May I add one last thing,
14	Special Master Garrie, while we have everyone here,
15	including Plaintiff?
16	On the turnaround time for these scenarios
17	or additional questions, we'd appreciate as much
18	time as we can get. It's hard to turn them around
19	and give good and full answers when we don't have
20	very much time.
21	MR. GARRIE: I fully acknowledge and hear
22	you. When I next talk with Judge Chhabria, I'll
23	communicate accordingly. But I agree with you and
24	appreciate and understand how much work and effort
25	is involved here and I will attempt to convey the
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1	same, as appropriate.
2	MS. RING: Thank you.
3	Look, the desire is to have a helpful
4	response. It's easier to do that with a little more
5	time. That's all. So thank you.
6	MR. GARRIE: Yeah. Noted for the record,
7	certainly.
8	And we'll go off the record here, unless
9	anybody has anything else to say.
10	***
11	(Whereupon, the hearing ended at 2:28 p.m. PST)
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1	CERTIFICATION OF COURT REPORTER
2	FEDERAL JURAT
3	
4	I, the undersigned, a Certified Shorthand
5	Reporter of the State of California do hereby
6	certify:
7	That the foregoing proceedings were taken
8	before me at the time and place herein set forth;
9	that any witnesses in the foregoing proceedings,
10	prior to testifying, were placed under oath; that a
11	verbatim record of the proceedings was made by me
12	using machine shorthand which was thereafter
13	transcribed under my direction; further, that the
14	foregoing is an accurate transcription thereof. I
15	further certify that I am neither financially
16	interested in the action nor a relative or employee
17	of any attorney of any of the parties.
18	IN WITNESS WHEREOF, I have this date
19	subscribed my name: Date: March 14, 2022.
20	
21	
22	
23	Michaele vilan Fulue
24	Michelle Milan Fulmer
25	CSR 6942, RPR, CRR, CRC
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# [& - add]

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# [translatable - user]

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#### [user - weaver]

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#### [weaver - zoom]

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# Exhibit O

No later than April 5, 2022, Facebook is to submit a proposed protocol for producing named Plaintiff user data pursuant to Judge Corley's Discovery Order No. 9 (Dkt. 557) beyond what has been produced to date. No later than April 11, 2022, Plaintiffs are to submit a response to Facebook's proposed protocol. Facebook's proposal should include, if appropriate, the following types of information.

- Data flow diagrams of the systems from which Facebook searches and produced Named Plaintiff
   Data.
- Functional descriptions and interdependencies for DataSwarm tasks that process Named Plaintiff
   Data.
- Descriptions of the schemas, tables, columns, and data types for Named Plaintiff Data that is produced.

Facebook's proposal should identify any Facebook systems and the Named Plaintiff Data that it will not produce from and include an explanation as to why it will not produce from such systems (i.e., burden, costs, duplicative, etc.)

The Special Master Garrie suggests that Facebook's protocol include producing the Named Plaintiff Data from the following.

- The Associations Objects (TAO) Facebook is to the identify and produce Named Plaintiff Data stored in TAO that is not present in the Named Plaintiff's DYI file and it should include, if applicable, the following: (a) the Objects and Associations in TAO associated with the Named Plaintiffs, but are either partially or not included in the DYI file (i.e. Named Plaintiff Data that is not exported in DYI file but stored in TAO). For example, data about a Page (as defined by Facebook) that the Named Plaintiff interacted with is stored in a MySQL table in TAO called Y, which was not included in the DYI file. Facebook identifies table Y and produces the rows/columns from table Y with the Named Plaintiff Data relating to the page.
- **Hive** -- Facebook is to query the Hive to identify the tables that store Named Plaintiff Data using the identifiers including the following: User ID (UID), Replacement ID (RID) Separable ID (SID), App-Scoped ID (ASID). For each table identified Facebook is to search the tables for the associated Named Plaintiff Data. (i.e., tables mapping user identifiers to ad segmentation data such as US Political spectrum segments). For example, a Facebook engineer writes a process that stores user data, including Named Plaintiff Data, in the Hive in table X and the table has a

column "RID." Facebook would produce the Named Plaintiff Data that is stored in table X. This effort should exclude any of the analysis done in relation to DataSwarm below.

• DataSwarm -- Facebook is to query DataSwarm Tasks to identify Task Definitions which involve Named Plaintiffs Data, using known identifiers such as User ID (UID), Replacement ID (RID) Separable ID (SID), App-Scoped ID (ASID). Facebook will review each of those Task Definitions and then search the sources/destinations identified in the task for the Named Plaintiff Data. See Special Master Hearing Transcript 3/9 p.35 5-13. For example, Facebook queries the DataSwarm Tasks and identifies a Task that uses the UserID to pipe data to Laser and stores that data in table Y. Facebook is to search and produce from table Y all Named Plaintiff Data (columns/row/schemas) that was not included in the DYI file.

#### **Written Questions**

Facebook is also to submit answers to the following questions and requests for documentation to the Special Master on or before April 1, 2022.

#### Hive

- How does ad impression and ad click data for Facebook users get into Hive?
- What tables store ad impression and ad click data for Facebook users?
- What data pipelines<sup>1</sup> are used to analyze ad impression and ad click data for Facebook users?

  Where is the final output of these data pipelines stored (e.g. Hive table names, TAO, etc.)?
- Identify a list of Hive tables containing columns that store a UID, RID, SID, ASID, or other
  means of identifying a Facebook user. The list is to include tables that were active during the
  relevant time period.
- What is the estimated time and cost to produce data for the Named Plaintiffs from Hive?

#### Ads Interests

- How does Facebook determine ads interests for a user based on what the user views (i.e. are ad interests based on what the user views on Facebook or other Internet activity)?
- Does Facebook track user activity across the Internet using cookies? If so, what cookies does Facebook use? Provide a statement explaining the use of cookies in tracking user activity on and

<sup>&</sup>lt;sup>1</sup> Data pipeline as used here refers to an end to end data process using data tasks in a dependency chain.

ORDER FOLLOWING MARCH 9, 2022 HEARING REGARDING PLAINTIFFS' MOTION

TO COMPEL PRODUCTION OF PLAINTIFF DATA

off the Facebook platform to create behavioral data about users. Provide documentation on the use of \_fbp, \_fbc, and DATR cookies. Explain whether the scope of tracking user activity includes on or off platform activity, or both.

- How are ads interests associated with a particular user? Where is ads interests data for individual users stored? Facebook is to describe whether ad interests data can be associated with a specific user via UID, RID, SID, ASID, or other means and whether it is included in the DYI file.
- What is the estimated time and cost to produce ad interests data for the Named Plaintiffs?

#### Contracts

• Is the data referenced in the contracts with Netflix, Microsoft, and/or YouTube that Facebook provided to Special Master Garrie for *in camera* review in connection with the Named Plaintiff Data hearings included in the DYI file? If not, Facebook is to specify what data is not included and where such data stored.

#### **Scenarios**

No later than April 4, 2022, Facebook is to submit documentation sufficient to describe the data collected both on and off platform or provided by Third Parties in the following scenarios and provide written responses to the questions below.

- Exhibit A to Plaintiff's Questions re: Data Collection and Use indicates that Facebook used
  predictive algorithms to generate five political segments for Facebook users (Very Liberal,
  Liberal, Moderate, Conservative, and Very Conservative) based on demographic, psychographic,
  and behavioral signals from Facebook user data.
  - What are the inputs into these algorithms (i.e. what are the demographic, psychographic, and behavioral signals used to generate the political segments)? Are these inputs provided by users or derived by Facebook?
  - How are the psychographic signals computed (e.g. how is the psychographic signal "High Dollar Religious Donor" determined)?

# Exhibit P



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#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

April 18, 2022

#### **VIA JAMS ACCESS**

Special Master Daniel B. Garrie DGarrie@jamsadr.com

Re: In re Facebook Consumer Privacy User Prcfile Litigation, JAMS Ref No.

1200058674

Dear Special Master Garrie,

Pursuant to the Special Master's Order Following March 9, 2022 Hearing Regarding Plaintiffs' Motion to Compel Production of Plaintiff Data, dated March 22, 2022, Facebook submits this proposal to assist in determining "what, if any" additional named plaintiff data should be produced, as directed in Judge Corley's order dated January 12, 2022 (Dkt. No. 807), and respond to "Scenario" questions.

#### Facebook's Proposal For Producing Additional Named Plaintiff Data

As Judge Corley explained in her most recent order on named plaintiff data, issued on January 12, 2022, the Special Master is working with the parties to determine "what, if any" additional named plaintiff data should be produced consistent with Rule 26. Facebook continues to believe that the named plaintiff data that has already been produced, which includes data in all three categories of "discoverable user data" identified in Judge Corley's Discovery Order No. 9, satisfies its obligations under Rule 26. The additional data Plaintiffs seek is neither relevant to their claims nor proportional to the needs of this case because it was not shared or made accessible to third parties.

That said, in an effort to resolve this issue, and consistent with Judge Corley's Discovery Order Nos. 11 and 12 allowing Plaintiffs to test Facebook's position on whether there is additional named plaintiff data that was shared or made accessible to third parties, Facebook proposes the protocol set forth below for producing additional named plaintiff data.

As explained in Facebook's March 7, 2022 submission to the Special Master, at a high level, user data is stored in production systems and the data warehouse.

Accordingly, we

propose to produce additional data from these systems as explained below.

#### **GIBSON DUNN**

Special Master Daniel B. Garrie April 18, 2022 Page 2

**TAO**. As also explained in the March 7, 2022 submission, TAO is a distributed data store for the social graph. There is an object and associations to that object for all users. *See* Ex. A, Internal Facebook Wiki Regarding TAO Core Concepts. For each named plaintiff, Facebook will produce the user objects and associations to those objects.

**Hive**. As explained in prior submissions to the Special Master, Hive is Facebook's data warehouse. *See* Ex. B, Declaration of Mengee Ji In Support of Facebook Inc.'s Motion For Reconsideration of Special Master's Order Regarding Named Plaintiff Data, ¶ 11. *Id.* ¶ 16. *Id.* ¶ 17.

Id. These searches are subject to many technical and policy limitations which make searching for individual user data unduly burdensome, including that (1)  $(id. \ \ 20); (2)$ 

(id. ¶ 22); and (4) data in many Hive tables are in cold storage and would have to be restored in order to be searched and analyzed, see Ex. C, Declaration of Mengee Ji In Support of Facebook Inc.'s Motion For a Protective Order Against Production of API Call Logs, ¶¶ 17-18; Special Master's Nov. 8, 2021 Order Re: Facebook's Motion For Protective Order Against Production of API Call Logs, ¶ 15 ("Special Master Garrie finds that the data in the Mobile Table and Web Table is not reasonably accessible because it is not readily usable in its 'cold storage' state and must be restored to 'warm storage' in order to be searched and analyzed (i.e. usable).").

For these reasons, among others, as reported in its April 11, 2022 submission, Facebook estimates that it would take approximately or around of computational cost to search across the entire Hive data warehouse and extract all data about a single user.

Once the searches have been conducted, and data is returned, the data must be manually reviewed to, among other things, confirm that the data is associated with a particular user and does not include personal data of other users (e.g., user blocking another user) or trade secrets, and does not create system integrity or security concerns.

#### **GIBSON DUNN**

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In light of the above technical limitations and burdens, Facebook proposes to search for and produce the following named plaintiff data from Hive to the extent it exists: (1) specific types of data requested or referenced by Plaintiffs in challenging Facebook's production of named plaintiff data; (2) a sample of data from Hive tables with user identifiers included in Exhibit B to the April 11, 2022 submission; and (3) the only data identified in Exhibit C to the April 11, 2022 submission that has not already been produced to Plaintiffs in the DYI file or otherwise: set permissions (audience controls on a post).

#### 1. Specific Types of Data

- Any remaining c<sub>j</sub>f-pla form activity: DYI includes off-platform activity. Facebook will search for and produce any underlying raw log-level data for off-platform activity provided to Facebook by a third party associated with the named plaintiffs.
- Any remaining ad interests: DYI includes ad interests. Facebook will search for and produce any underlying raw log-level data associated with the named plaintiffs.
- Any remaining ad click data: DYI includes ad click data. Facebook will search for and produce any underlying raw log-level ad clicks data associated with the named plaintiffs.
- *Ad impressions data*: Facebook will search for and produce ad impressions data associated with the named plaintiffs.
- Any remaining custom audience data: DYI identifies third parties who have created
  custom audiences associated with a user. Facebook will search for and produce any
  more granular information about custom audiences associated with the named
  plaintiffs, including custom audience type, whether it was used to deliver ads, and
  when.

#### 2. Sampling from Hive tables identified in Exhibit A of April 11, 2022 submission

Given that data in Hive tables are not shared or made accessible to third parties, the significant burden of searching for and producing individual user data from Hive as explained in prior submissions, and that Facebook has already produced nearly a million pages of the named plaintiff data from the DYI system, Hive data is not relevant or proportional to the needs of this case. Facebook nevertheless understands that, as Judge Corley found in Discovery Order Nos. 11 and 12, Plaintiffs are allowed to test Facebook's positions on "sharing and accessibility" by obtaining discovery into what data exists and how it is used. To that end, and consistent with the requirements of relevance and proportionality under Rule 26, Facebook proposes a sampling process.

#### **GIBSON DUNN**

Special Master Daniel B. Garrie April 18, 2022 Page 4

In addition to the above specific categories of data, Facebook will produce a sample of data in warm storage from Hive tables identified in Exhibit A of the April 11, 2022 submission. Specifically, Facebook will produce data from 200 tables in Exhibit A to be jointly selected by Facebook and Plaintiffs. Facebook will randomly select 100 tables and Plaintiffs will select 100 tables.

#### 3. User data identified in Exhibit B of the April 11, 2022 submission and not in DYI

As shown in Exhibit C of Facebook's April 11, 2022 submission to the Special Master, only two types of user data in the contracts submitted to the Special Master for in camera review are not included in the DYI file: (1) privacy settings, and (2) set permissions (audience controls on a post). (1) has already been produced. Facebook will agree to produce (2) from TAO.

With respect to other Facebook systems, not including TAO and Hive, there are seven systems<sup>1</sup> that did not fall into one of the categories identified by the Special Master in Hearing Order Regarding Plaintiffs' Motion To Compel Production of Plaintiff Data, dated February 21, 2022: (MySQL), (MySQL), and Producing data from any of these systems would be extremely burdensome and is not relevant or proportional to the needs of this case.

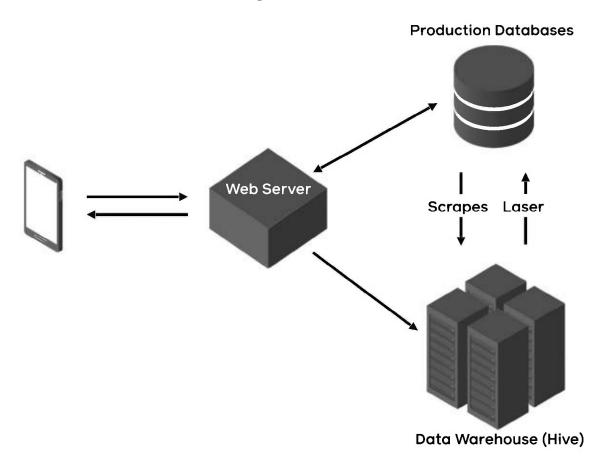
- and and These systems are BLOB and binary storage and are not searchable by user identifiers.
- This system is a real-time aggregation counter and is not searchable by user identifiers.
- (MySQL), (MySQL), and These systems contain unstructured data and cannot be searched by user identifiers, except for tables using Ent or Node schemas for which there is a structured deletion plan. Searching other tables for named plaintiff data would require a full text search of all tables that would take many months to complete and generate a significant number of false positives requiring manual review of all data returned.

With respect to Dataswarm, the Special Master suggested that Facebook "query Tasks to identify Task Definitions which involve named plaintiff data" using identifiers,

should have been put in Category (6) because the data is in DYI. should also have been put in Category (6) because it is duplicative of TAO. MySQL describes the general use of MySQL databases and should not be a separate entry. For example, (MySQL) and (MySQL) are specific uses of MySQL.

Special Master Daniel B. Garrie April 18, 2022 Page 5

review those Tasks Definitions, and then search for named plaintiff data in the sources/destinations identified. We have investigated the Special Master's suggestion and did not include it in our proposed protocol because it is not feasible. Dataswarm is a collection of data processing operations coded in Python. Task Definitions are the Python code and Tasks are the running of that code. Searching Python code for user identifiers would be done through a syntax-only search which cannot understand the semantic meaning of the data being processed, i.e., whether a column name being processed involves a user identifier. As a result, additional code would have to be developed to understand whether/how identifiers are involved in a particular Task Definition.



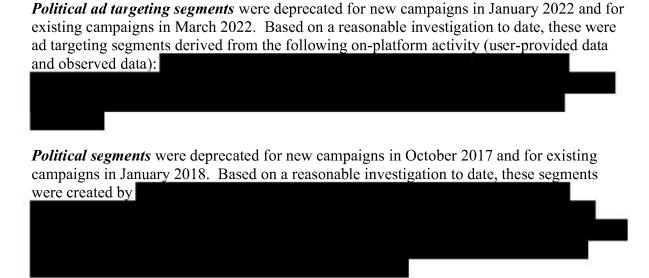
Special Master Daniel B. Garrie April 18, 2022 Page 6

#### **Scenarios**

No later than April 4, 2022, Facebook is to submit documentation sufficient to describe the data collected both on and off platform or provided by Third Parties in the following scenarios and provide written responses to the questions below: "Exhibit A to Plaintiff's Questions re: Data Collection and Use indicates that Facebook used predictive algorithms to generate five political segments for Facebook users (Very Liberal, Liberal, Moderate, Conservative, and Very Conservative) based on demographic, psychographic, and behavioral signals from Facebook user data."

1. What are the inputs into these algorithms (i.e. what are the demographic, psychographic, and behavioral signals used to generate the political segments)? Are these inputs provided by users or derived by Facebook?

**Answer**: As an initial matter, Very Liberal, Liberal, Moderate, Conservative, and Very Conservative are ad interests ("political ad interests"), which are distinct from political segmentation "based on demographic, psychographic, and behavioral signals from Facebook user data" ("political segments"). Political segments are political ad interests that are divided into political segments.



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2. How are the psychographic signals computed (e.g. how is the psychographic signal "High Dollar Religious Donor" determined)?

**Answer**: Based on a reasonable investigation to date, we believe "High Dollar Religious Donor" was an ad targeting option based on partner categories. We do not know how this partner category was created. Partner categories were deprecated in October 2018.

3. Is information regarding identifiable ethnic affinities provided by users or derived by Facebook? How is ethnic affinity derived?

**Answer**: Ethnic affinities, also referred to as multicultural affinities, were ad interests created by Facebook based on a user's on-platform activity indicating an interest in content relating to certain communities. Ethnic affinity ad interests were deprecated in August 2020.

4. Where is political segmentation data for Facebook users stored?

**Answer**: Political segments were deprecated in October 2017 for new campaigns. Existing campaigns using political segments ended on January 1, 2018. Based on a reasonable investigation, we believe that political segments were deleted in January 2018.

5. Is political segmentation determined for a Facebook user as part of a data process that runs on a regularly scheduled basis or evaluated in real time when an ad is served?

**Answer**: Based on a reasonable investigation to date, we believe political segments were created manually by

6. Is political segmentation associated with a Facebook user if possible (i.e. via UID, RID, SID, ASID, or another identifier that can be mapped to a user)? If so, explain how the political segmentation is associated with a Facebook user.

**Answer**: Based on a reasonable investigation to date, we believe political segments were associated with users by UIDs.

7. Is an individual's assigned political segment part of the DYI file?

**Answer**: Based on a reasonable investigation to date, we do not believe political segments were included in the DYI file.

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Rasingio Ring

Sincerely,

Rosemarie T. Ring

# Exhibit Q





#### DESIGNATED HIGHLY CONFIDENTIAL—ATTORNEYS' EYES ONLY BY FACEBOOK

April 29, 2022

#### **VIA JAMS ACCESS**

Special Master Daniel B. Garrie DGarrie@jamsadr.com

Re: *In re Facebook, Inc., Consumer Privacy User Profile Litig.*, JAMS Ref No. 1200058674, Case No. 3:18-md-02843-VC (N.D. Cal.)

Dear Special Master Garrie:

Pursuant to Order Following March 9, 2022 Hearing Regarding Plaintiffs' Motion To Compel Production of Plaintiff Data dated March 22, 2022, Plaintiffs submit this response to Facebook's Proposal for Producing Additional Named Plaintiff Data, submitted April 18, 2022. For ease of reference, Plaintiffs have pasted Facebook's proposal, "highlighted" in gray, into this document and provide responses to its proposal inline. To summarize, Facebook should be ordered to produce the following data.

From **TAO**, in addition to what Facebook offers to produce—for each Named Plaintiff, the user objects and associations to those objects—it should also be ordered to produce the TAO schema and provide answers to questions about what information is "currently maintained" in TAO.

From **Hive**, for each Named Plaintiff: First, Facebook should produce the types of data it identified in its April 18 submission and the additional types of data identified in this response, whether included in the DYI file or not. However, the production should not be limited to data that is associated with a Named Plaintiff. Rather, it should include data that can be associated with a Named Plaintiff. Second, Facebook should produce the schema and an excerpt comprising the top five rows of each of the Hive tables listed in Exhibit B of its April 11 submission. Plaintiffs propose a process for identifying the tables Facebook should be required to search for data that can be associated with a Named Plaintiff.

Finally, for both **TAO** and **Hive**, based on Facebook's response regarding the time period of the data that it can produce from these sources, it should be required to identify the efforts it made to maintain data that could be associated with the Named Plaintiffs.

#### FACEBOOK'S PROPOSAL FOR PRODUCING ADDITIONAL NAMED PLAINTIFF DATA

As Judge Corley explained in her most recent order on named plaintiff data, issued on January 12, 2022, the Special Master is working with the parties to determine "what, if any" additional named plaintiff data should be produced consistent with Rule 26. Facebook continues

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to believe that the named plaintiff data that has already been produced, which includes data in all three categories of "discoverable user data" identified in Judge Corley's Discovery Order No. 9, satisfies its obligations under Rule 26. The additional data Plaintiffs seek is neither relevant to their claims nor proportional to the needs of this case because it was not shared or made accessible to third parties.

That said, in an effort to resolve this issue, and consistent with Judge Corley's Discovery Order Nos. 11 and 12 allowing Plaintiffs to test Facebook's position on whether there is additional named plaintiff data that was shared or made accessible to third parties, Facebook proposes the protocol set forth below for producing additional named plaintiff data.

As explained in Facebook's March 7, 2022 submission to the Special Master, at a high level, user data is stored in production systems and the data warehouse.

Accordingly, we propose to

produce additional data from these systems as explained below.

#### Plaintiffs' Response to Facebook's Introduction:

This is the first time Facebook has conceded that Judge Corley's discovery orders required the production of any Named Plaintiffs' data that Facebook contends was not shared with or made accessible to third parties. Before now, Facebook has consistently taken the position that Judge Corley's discovery orders did not require the production of any Named Plaintiffs' data that Facebook asserts was not shared with or made accessible to third parties. This about-face is welcome and long overdue.

However, Facebook's proposed protocol and answers to the Special Master's inquiry generates more questions than answers. That may be because, as an internal document leaked this week reveals, Facebook does not know where Named Plaintiff data is located (or, indeed, to whom it was disclosed). See Lorenzo Franceschi-Bicchierai, Facebook Doesn't Know What It Does With Your Data, Or Where It Goes: Leaked Document, Motherboard (Apr. 26, 2022).

According to the leaked document, Facebook "can't enumerate all the data we have - where it is; where it goes; how it's used"—which raises the question, "how can we make commitments about it to the outside world?" The document illustrates the challenge to Facebook using an analogy. "Imagine you hold a bottle of ink in your hand. This bottle of ink is a mixture of all kinds of user data (3PD, 1PD, SCD, Europe, etc.)¹ You pour that ink into a lake of water (our open data systems; our open culture) . . . and it flows . . . everywhere. How do you put that ink back in the bottle? How do you organize it again, such that it only flows to the allowed places in the lake?"

Based on this newly disclosed information, it is possible that the reason Facebook's efforts to determine what data it has that can be associated with the Named Plaintiffs have been so incomplete, unfocused, and confusing is that Facebook does not and cannot know. If it is not

<sup>&</sup>lt;sup>1</sup> According to the article, "3PD" is third-party data, "1PD" is first-party data, and "SCD" is sensitive categories data.

able to identify all data that can be associated with the eight Named Plaintiffs, Facebook should clearly state that fact.

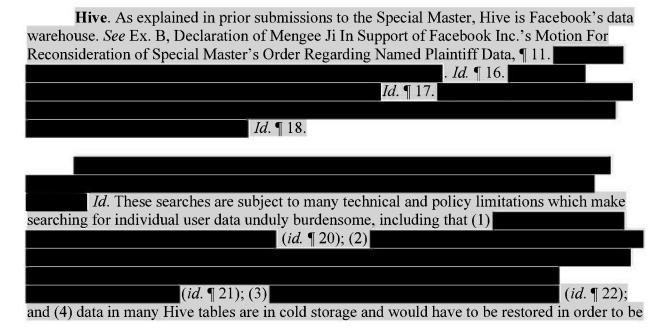
**TAO**. As also explained in the March 7, 2022 submission, TAO is a distributed data store for the social graph. There is an object and associations to that object for all users. *See* Ex. A, Internal Facebook Wiki Regarding TAO Core Concepts. For each named plaintiff, Facebook will produce the user objects and associations to those objects.

#### Plaintiffs' Response to TAO:

In addition to Facebook's proposal, it should also be ordered to produce the TAO schema referenced on page 2 of Exhibit A in its April 18 submission. Though the reference to the TAO schema exhibit includes a hyperlink, the web page is password protected and inaccessible to Plaintiffs.

In response to Plaintiffs' question about the time range captured by this category of data, Facebook stated that it will search for and produce user objects and associations to those objects "that are currently maintained in TAO which cover the life of the account." Ex. 1. That response raises two more questions. First, what is "currently maintained in TAO"? In other words, for the Named Plaintiffs who are still active on Facebook, are there objects and associations that were once in TAO but are no longer? If so, what has Facebook done to maintain the Named Plaintiffs' objects and associations since the onset of this litigation? Second, what efforts did Facebook make to maintain objects and associations in TAO for the Named Plaintiff who deleted her Facebook account?

Plaintiffs ask that Facebook answer the questions above by May 6, 2022, and that Facebook be ordered to produce the user objects and associations to those objects for each Named Plaintiff, along with the TAO schema, by May 13, 2022.



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searched and analyzed, *see* Ex. C, Declaration of Mengee Ji In Support of Facebook Inc.'s Motion For a Protective Order Against Production of API Call Logs, ¶¶ 17-18; Special Master's Nov. 8, 2021 Order Re: Facebook's Motion For Protective Order Against Production of API Call Logs, ¶ 15 ("Special Master Garrie finds that the data in the Mobile Table and Web Table is not reasonably accessible because it is not readily usable in its 'cold storage' state and must be restored to 'warm storage' in order to be searched and analyzed (i.e. usable).").

For these reasons, among others, as reported in its April 11, 2022 submission, Facebook estimates that it would take approximately or around of computational cost to search across the entire Hive data warehouse and extract all data about a single user.

Once the searches have been conducted, and data is returned, the data must be manually reviewed to, among other things, confirm that the data is associated with a particular user and does not include personal data of other users (e.g., user blocking another user) or trade secrets, and does not create system integrity or security concerns.

In light of the above technical limitations and burdens, Facebook proposes to search for and produce the following named plaintiff data from Hive to the extent it exists: (1) specific types of data requested or referenced by Plaintiffs in challenging Facebook's production of named plaintiff data; (2) a sample of data from Hive tables with user identifiers included in Exhibit B to the April 11, 2022 submission; and (3) the only data identified in Exhibit C to the April 11, 2022 submission that has not already been produced to Plaintiffs in the DYI file or otherwise: set permissions (audience controls on a post).

#### Plaintiffs' Response to Facebook's Hive Introduction:

Because Facebook elaborates on its proposal to produce three types of Named Plaintiff data from Hive in the following sections, Plaintiffs will respond to its proposal regarding those three types of data inline. Plaintiffs respond here to Facebook's assertion that it will take of computational cost to search across the entire Hive data warehouse and extract all data about a single user.

There is no doubt that there is some burden associated with searching across Hive. But Facebook's repeated assertion that of the of computational cost required does not provide sufficient information about the actual burden it faces for two reasons.

First, Facebook is not being asked to search across the entire Hive data warehouse. It only needs to search tables that contain data that can be associated with individual users during the relevant time period for this action.

Second, the mention of the number of CPU days of computational cost is almost entirely meaningless without knowing the amount of computing power in Hive. It is reasonable to assume that Facebook, one of the largest technology companies in the world, has available at least tens of thousands of CPUs—if not hundreds of thousands or even more.

Facebook's response also prompts additional concerns. Plaintiffs are concerned that Facebook does not identify the relevant tables that are in cold storage and when they were placed in cold storage. To the extent that any such table were placed in cold storage during the pendency of this action, Facebook should not be permitted to elide its discovery obligations regarding Named Plaintiff data due to its failure to suspend archiving. And Plaintiffs are concerned about Facebook's repeated framing of what it will produce. Facebook's proposal is limited to data that is associated with a Named Plaintiff. It should be ordered to produce data that can be associated with a Named Plaintiff in a table, Facebook should still produce the data if it is possible for Facebook to associate that data with a Named Plaintiff (e.g., by reference to another table).

#### 1. Specific Types of Data

- Any remaining off-platform activity: DYI includes off-platform activity. Facebook will search for and produce any underlying raw log-level data for off-platform activity provided to Facebook by a third party associated with the named plaintiffs.
- Any remaining ad interests: DYI includes ad interests. Facebook will search for and produce any underlying raw log-level data associated with the named plaintiffs.
- Any remaining ad click data: DYI includes ad click data. Facebook will search for and produce any underlying raw log-level ad clicks data associated with the named plaintiffs.
- *Ad impressions data*: Facebook will search for and produce ad impressions data associated with the named plaintiffs.
- Any remaining custom audience data: DYI identifies third parties who have created custom audiences associated with a user. Facebook will search for and produce any more granular information about custom audiences associated with the named plaintiffs, including custom audience type, whether it was used to deliver ads, and when.

#### Plaintiffs' Response to "Specific Types of Data" from Hive:

Plaintiffs have several concerns regarding Facebook's proposal to produce the above "specific types of data requested or referenced by Plaintiffs in challenging Facebook's production of named plaintiff data."

First, Facebook should not limit its production of these specific types of data based on the specific language Plaintiffs used to describe them. For example, Facebook should not limit its production of ad impressions data to data associated with a specific table, column header, or cell containing the phrase "ad impressions." Unlike Facebook, Plaintiffs do not have access to Hive. Therefore, the "specific types of data requested or reference by Plaintiffs" should be construed broadly as providing descriptive information.

Second, Facebook should not limit its production of these specific types of data based on related data included in the DYI file. For example, Facebook states that ad interests are included in the DYI file and agrees to search for raw log-level ad interest data associated with the Named Plaintiffs. But, as discussed below, Facebook also disclosed it does not believe one type of ad interest the Special Master inquired about—political segments—are included in the DYI files. It is not clear whether any other ad interests may not be included in the DYI file. In addition to the raw log-level data, Facebook should also search for and produce *all* ad interests that can be associated with Named Plaintiffs (not just those already associated with Named Plaintiffs), whether included in the DYI file or not. This example should not be understood to indicate Plaintiffs' interest in ad interests only. Rather, it applies equally to each of the specific types of data identified. For each, it should produce all data capable of being associated with the Named Plaintiffs, whether included in the DYI file or not.

Third, Plaintiffs also request that Facebook produce these additional specific types of data:

- i. Ad profile data for each of the Named Plaintiffs. Aldo King testified Facebook created ad profiles for each user, but also testified that they were uncertain about the scope of data that was incorporated. *See, e.g.*, Ex. 2, King Dep. Tr. at 68:14-69:7 (unsure whether visits to third-party websites were incorporated in ad profiles); *id.* at 83:9-20 (unsure whether were incorporated in ad profiles). Facebook's submission also states that a specific type of ad profile (political segments) was based in part on the composition of data do not appear to have been included in the DYI files.
- ii. The tables containing data that stores, for the entirety of their time on Facebook, the list of apps authorized or installed, and the period of time during which each such app was authorized or installed, by (a) the Named Plaintiffs and (b) each of the Named Plaintiff's Facebook friends (by FBID and username). That information should enable Plaintiffs to use other produced documents, such as the Method Table and the Capabilities Tool, to determine whether any of the Named Plaintiffs' information may have been made available to a third party through friends \* or related permissions.

Fourth, to ensure that there is no miscommunication, Facebook should identify in writing the specific tables identified that include these types of information and how it determined those specific tables (and not others) had these types of information.

Fifth, for each of the tables containing this specific information, Facebook should produce data flow diagrams and schemas. *See* March 22, 2022 Order at 1.

Sixth, in response to Facebook's submission, Plaintiffs asked about the time range of the data Facebook proposes to produce for each of the above categories. In response, Facebook indicated it will produce any *remaining* off-platform activity up to the last two years, any remaining ad interests for "at least 90 days," and "any *remaining* custom audience data." Ex. 1 (emphasis added). Those responses are concerning. The Named Plaintiffs joined this litigation more than 2 years ago, and Plaintiffs are concerned about the apparent insufficiency of

Special Master Danie B. Garrie April 29, 2022 Page 7

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Facebook's efforts to preserve this information. From Facebook's response of "up to two years," it is unclear whether there is some off-platform activity that is not available for even the two-year period. Further, though Facebook's responses regarding the other specific categories are less troubling on the surface—it states it will produce responsive information from 2015—it is unclear whether Facebook could have produced responsive information from earlier time periods if it had made an earlier effort to preserve the information.

By May 6, 2022, Facebook should be ordered to identify the efforts it has undertaken to preserve the specific types of data identified by Facebook and Plaintiffs in this section that can be associated with the Named Plaintiffs. Facebook should be ordered to produce the above-identified information by May 27, 2022.

#### 2. Sampling from Hive tables identified in Exhibit A of April 11, 2022 submission

Given that data in Hive tables are not shared or made accessible to third parties, the significant burden of searching for and producing individual user data from Hive as explained in prior submissions, and that Facebook has already produced nearly a million pages of the named plaintiff data from the DYI system, Hive data is not relevant or proportional to the needs of this case. Facebook nevertheless understands that, as Judge Corley found in Discovery Order Nos. 11 and 12, Plaintiffs are allowed to test Facebook's positions on "sharing and accessibility" by obtaining discovery into what data exists and how it is used. To that end, and consistent with the requirements of relevance and proportionality under Rule 26, Facebook proposes a sampling process.

In addition to the above specific categories of data, Facebook will produce a sample of data in warm storage from Hive tables identified in Exhibit A of the April 11, 2022 submission. Specifically, Facebook will produce data from 200 tables in Exhibit A to be jointly selected by Facebook and Plaintiffs. Facebook will randomly select 100 tables and Plaintiffs will select 100 tables.

#### Plaintiffs' Response to Sampling from Hive Tables:

As an initial matter, Plaintiffs believe Facebook intended to reference Exhibit B of its April 11 submission, not Exhibit A. The April 11 submission describes Exhibit A as "a list of data pipelines used to analyze ad impression and ad click data for which we believe output i[s] stored in Hive," and Exhibit B as "a list of Hive tables that" may "store user identifiers with data as it enters Hive."

Facebook's proposal is untenable for two reasons.

First, Exhibit B lists Hive tables. Facebook proposes that 100 of those tables — fewer than 1% of them — be selected at random for limited production. While Facebook

<sup>&</sup>lt;sup>2</sup> Facebook's April 11 submission states that "Exhibit B is a list of Hive tables that store user identifiers with data as it enters Hive," but then states that the tables "were identified using tools that probabilistically identified them as containing user identifiers."

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proposes that Plaintiffs be permitted to select another 100 tables, that is not only (again) fewer than 1% of the tables it identified that may contain Named Plaintiff data, but Exhibit B does not contain sufficient information for Plaintiffs to make an informed determination about which tables to select.

Second, the information Facebook proposes to produce from those 200 tables is unduly limited. Facebook proposes that it "will produce a sample of data in warm storage" from the selected. That description is insufficiently specific. What does Facebook mean by "a sample of data"? What data is "in warm storage" (and, equally, what data is not)? Moreover, given the number of tables at issue and the hundreds of millions of users whose information may be contained therein, a sample of 200 tables is exceedingly unlikely to contain Named Plaintiff data. It is far too late in this already attenuated process and far too close to the end of fact discovery for this level of imprecision.

In addition, Plaintiffs are concerned about the extent of Facebook's efforts to preserve Named Plaintiffs' data stored in Hive. In its response to Plaintiffs' inquiry about the time period it would produce, Facebook stated that the "[t]ime range depends on the tables selected." Ex. 1. Plaintiffs need to understand what attempts Facebook made to retain data in Hive that can be associated with the Named Plaintiffs, as well as the standard retention policies for various tables.

Because Facebook's proposal is untenable, Plaintiffs propose the following production protocol.

First, by May 6, 2022, Facebook should be ordered to describe the efforts it undertook to preserve data in Hive that can be associated with Named Plaintiffs and the timing of those efforts. On that date, Facebook should also provide the standard preservation practices applicable to each of the tables it identified in Exhibit B.

Second, by May 13, 2022, Facebook should produce to Plaintiffs and make available to the Special Master the schema and an excerpt comprising the top five rows of each of the Hive tables listed in Exhibit B. This information will help Plaintiffs decide the specific tables to search for Named Plaintiff data.

Third, by June 3, 2022, Plaintiffs will identify to Facebook and the Special Master the tables from which they seek Named Plaintiff data. If Facebook does not agree to produce from the tables identified by Plaintiffs, the parties will have one week to attempt to resolve the dispute, during which time they will be required to meet and confer at least once. If the parties have not reached agreement by June 10, the issue will be submitted, without additional briefing or explanation unless requested, to the Special Master.

Fourth, within one week of parties' agreement on the tables to be searched or the Special Master resolves the issue, the Special Master will enter a rolling production schedule.

#### 3. User data identified in Exhibit B of the April 11, 2022 submission and not in DYI

#### Facebook's Statement:

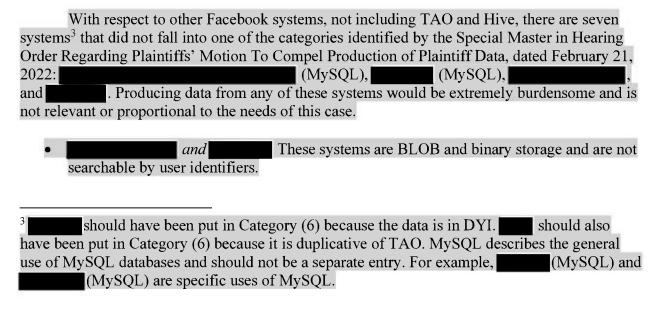
As shown in Exhibit C of Facebook's April 11, 2022 submission to the Special Master, only two types of user data in the contracts submitted to the Special Master for in camera review are not included in the DYI file: (1) privacy settings, and (2) set permissions (audience controls on a post). (1) has already been produced. Facebook will agree to produce (2) from TAO.

#### Plaintiffs' Response to User Data Identified in Exhibit C of April 11 Submission:

As an initial matter Plaintiffs believe Facebook intended to reference Exhibit C, not Exhibit B. The April 11 submission identified Exhibit C as "identif[ying] user data in the contracts submitted to Special Master Garrie for *in camera* review." Moreover, Plaintiffs' response assumes that Exhibit C accurately reflects all of the types of data in the contracts Facebook submitted to the Special Master for review.

Regarding privacy settings, attached to this response as Exhibits 3 and 4 are the privacy settings Facebook produced. Facebook should confirm that Exhibits 3 and 4 include all of the information Facebook has about each of the Named Plaintiff's privacy settings during the relevant time period. If there is any additional information related to the Named Plaintiffs' privacy settings, Facebook should produce it. Facebook should also describe any limitations on the privacy settings it is able to produce (e.g., it only retains privacy settings for a certain period of time, it does not retain privacy settings for Named Plaintiffs who are no longer on Facebook, etc.).

Regarding set permissions, Plaintiffs agree with Facebook's proposal so long as the production is not limited in any way. Facebook should also describe any limitations on the set permissions it is able to produce (e.g., it only retains set permissions for a certain period of time, it does not retain set permissions for Named Plaintiffs who are no longer on Facebook, etc.).

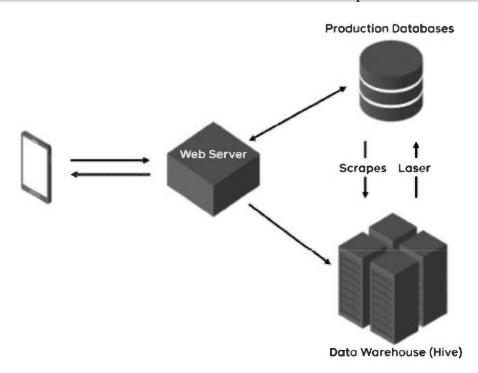


- This system is a real-time aggregation counter and is not searchable by user identifiers.
- (MySQL), and These systems contain unstructured data and cannot be searched by user identifiers, except for tables using Ent or Node schemas for which there is a structured deletion plan. Searching other tables for named plaintiff data would require a full text search of all tables that would take many months to complete and generate a significant number of false positives requiring manual review of all data returned.

#### Plaintiffs' Response:

Based on the expectation that Facebook's descriptions are accurate regarding what is contained in them and how that data is used and stored, Plaintiffs will not presently seek the data from the seven systems described in this section.

With respect to Dataswarm, the Special Master suggested that Facebook "query Tasks to identify Task Definitions which involve named plaintiff data" using identifiers, review those Tasks Definitions, and then search for named plaintiff data in the sources/destinations identified. We have investigated the Special Master's suggestion and did not include it in our proposed protocol because it is not feasible. Dataswarm is a collection of data processing operations coded in Python. Task Definitions are the Python code and Tasks are the running of that code. Searching Python code for user identifiers would be done through a syntax-only search which cannot understand the semantic meaning of the data being processed, i.e., whether a column name being processed involves a user identifier. As a result, additional code would have to be developed to understand whether/how identifiers are involved in a particular Task Definition.



#### Plaintiffs' Response:

Based on Facebook's description of Dataswarm, Plaintiffs will not presently seek production from that system.

#### **SCENARIOS**

#### Special Master's Questions Following March 9, 2022 Hearing:

No later than April 4, 2022, Facebook is to submit documentation sufficient to describe the data collected both on and off platform or provided by Third Parties in the following scenarios and provide written responses to the questions below: "Exhibit A to Plaintiff's Questions re: Data Collection and Use indicates that Facebook used predictive algorithms to generate five political segments for Facebook users (Very Liberal, Liberal, Moderate, Conservative, and Very Conservative) based on demographic, psychographic, and behavioral signals from Facebook user data."

1. What are the inputs into these algorithms (i.e. what are the demographic, psychographic, and behavioral signals used to generate the political segments)? Are these inputs provided by users or derived by Facebook?

**Facebook's Answer**: As an initial matter, Very Liberal, Liberal, Moderate, Conservative, and Very Conservative are ad interests ("political ad interests"), which are distinct from political segmentation "based on demographic, psychographic, and behavioral signals from Facebook user data" ("political segments"). Political segments are political ad interests that are divided into political segments.

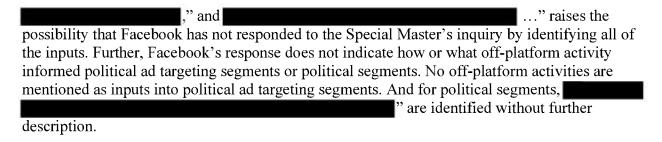
Political ad targeting segments were deprecated for new campaigns in January 2022 and for
existing campaigns in March 2022. Based on a reasonable investigation to date, these were ad
targeting segments derived from the following on-platform activity (user-provided data and
observed data):
<b>Political segments</b> were deprecated for new campaigns in October 2017 and for existing campaigns in January 2018. Based on a reasonable investigation to date, these segments were
created by

#### Plaintiffs' Response:

Plaintiffs	are concerned	about the	imprecision	of Facel	book's respor	ise. The	use of
phrases such as "						٠.	

Special Master Danie B. Garrie April 29, 2022 Page 12

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Facebook's statement that political ad targeting segments were deprecated in March 2022, and political segments deprecated in January 2018 are non sequiturs. Plaintiffs' proposed class period runs from 2007. Any responsive information from 2007 to the point of deprecation is relevant and should be provided.

2. How are the psychographic signals computed (e.g. how is the psychographic signal "High Dollar Religious Donor" determined)?

**Facebook's Answer**: Based on a reasonable investigation to date, we believe "High Dollar Religious Donor" was an ad targeting option based on partner categories. We do not know how this partner category was created. Partner categories were deprecated in October 2018.

#### Plaintiffs' Response:

Facebook does not answer the Special Master's question. The only response it provides concerns an example identified by the Special Master for illustrative purposes, and even concerning that example, Facebook's response is that it can't respond because it doesn't know.

Facebook's statement that partner categories were deprecated in October 2018 is a non sequitur. Again, information from 2007 through deprecation is relevant to Plaintiffs' claims.

3. Is information regarding identifiable ethnic affinities provided by users or derived by Facebook? How is ethnic affinity derived?

**Facebook's Answer**: Ethnic affinities, also referred to as multicultural affinities, were ad interests created by Facebook based on a user's on-platform activity indicating an interest in content relating to certain communities. Ethnic affinity ad interests were deprecated in August 2020.

#### Plaintiffs' Response:

Facebook's answer of how ethnic affinity derived is so general as to be almost meaningless. What "on-platform activity indicating an interest in content relate to certain communities" was considered? What does Facebook consider to be activity "indicating an interest in content relating to certain communities"? Which content? Which communities? How did Facebook use that information to derive ethnic affinities (or multicultural affinities)? What ethic affinities were computed? Was any information other than the individual user's on-platform activity indicating an interest in content related to certain communities considered?

Facebook's statement that ethnic affinity ad interests were deprecated in August 2020 is a non sequitur. Again, information from 2007 through deprecation is relevant to Plaintiffs' claims.

4. Where is political segmentation data for Facebook users stored?

**Facebook's Answer**: Political segments were deprecated in October 2017 for new campaigns. Existing campaigns using political segments ended on January 1, 2018. Based on a reasonable investigation, we believe that political segments were deleted in January 2018.

#### Plaintiffs' Response:

Plaintiffs are concerned by Facebook's decision to delete political segments data and ask that Facebook provide information about the circumstances that led to its deletion. Further, even if it is not retained, Plaintiffs ask Facebook to identify where political segments data was stored before it was deleted. That answer may help inform the parties' analysis of where relevant information associated with Named Plaintiffs is presently stored. Plaintiffs note that Facebook did not respond completely with respect to political segmentation data, as Facebook did not discuss political ad targeting segments in its response. Plaintiffs ask that Facebook supplement its response no later than May 6, 2022.

5. Is political segmentation determined for a Facebook user as part of a data process that runs on a regularly scheduled basis or evaluated in real time when an ad is served?

**Facebook's Answer**: Based on a reasonable investigation to date, we believe political segments were created manually by

#### Plaintiffs' Response:

Facebook's response appears adequate with respect to political segments. Plaintiffs note, however, that Facebook did not respond completely with respect to political segmentation data, because it omitted political ad targeting segments from its response. Plaintiffs ask that Facebook supplement its response no later than May 6, 2022.

6. Is political segmentation associated with a Facebook user if possible (i.e. via UID, RID, SID, ASID, or another identifier that can be mapped to a user)? If so, explain how the political segmentation is associated with a Facebook user.

**Facebook's Answer**: Based on a reasonable investigation to date, we believe political segments were associated with users by UIDs.

#### Plaintiffs' Response:

Facebook's response appears adequate with respect to political segments. Plaintiffs note, however, that Facebook did not respond completely with respect to political segmentation data

because it omitted political ad targeting segments from its response. Plaintiffs ask that Facebook supplement its response no later than May 6, 2022.

7. Is an individual's assigned political segment part of the DYI file?

**Facebook's Answer**: Based on a reasonable investigation to date, we do not believe political segments were included in the DYI file.

#### Plaintiffs' Response:

This response conflicts with Facebook's April 11 submission. In its April 18 submission, Facebook defines political segments as political ad interests. In its April 11 submission, Facebook asserted that ad interests are "available in DYI." But in its April 18 submission, Facebook says that it does not believe political segments were included in the DYI file. Plaintiffs are concerned that there may be other ads interests that were also not included in the DYI file.

Plaintiffs also request that Facebook produce the assigned political segments and any other ad interests not included in the DYI file for each of the Named Plaintiffs.

Regards,

Derek W. Loeser

dloeser@kellerrohrback.com

Lesley E. Weaver lweaver@bfalaw.com

# Exhibit R

ORDER FOLLOWING MAY 17, 2022 HEARING REGARDING PRODUCTION OF NAMED PLAINTIFF DATA

No later than June 2, 2022, Facebook is to submit responses to the following questions and provide the requested additional information.

- How did Facebook identify the Hive tables in Exhibit B to Facebook's April 11, 2022
   submission ("Exhibit B") identified as possibly containing user identifiers? Facebook's answer is
   to include technical details about the process used to identify the Hive tables.
- Can Facebook provide descriptions for the Hive tables identified in Exhibit B? If so, provide the descriptions.
- How long would it take to extract the column names and data types (schema) for the Hive tables identified in Exhibit B? Facebook's answer is to include a description of the processes and steps it would need to perform to provide the requested data.
- Did Facebook's search to identify the tables set out in Exhibit B include searching cold storage?

  If not, why not?
- In Exhibit B to Facebook's April 18, 2022 letter submission (Declaration of Mengge Ji), Mengge Ji states

Expand on this statement, include descriptions of the databases, and clarify what is meant by "databases" in this context.

- One of Facebook's responses in their April 11, 2022 letter submission at page 2 states "tables believed to contain data that that is either duplicative or transformed." What does transformed mean in this context? Facebook's answer is to include three examples of "transformation."
- Facebook's April 11, 2022 letter submission at page 2 refers to six categories of tables that were not included in the list in Exhibit B: (1) temporary, test, and error tables; (2) tables used to evaluate system performance; (3) tables that contain no data; (4) tables related to other Meta products (e.g., Oculus, Instagram, and WhatsApp); (5) tables used for infrastructure, operations,

and product testing; and (6) tables believed to contain data that is either duplicative or transformed. Provide a description of each of these six categories of tables.

No later than May 30, 2022, Facebook is to provide the revised proposal they discussed at the hearing.

No later than June 6, 2022, the parties are to submit briefs, not to exceed five (5) pages not including exhibits, on the issues of Hive table selection, production of data related to apps installed by friends of Named Plaintiffs, and whether Facebook should be compelled to search cold storage for Named Plaintiff data.

IT IS SO ORDERED.

Tuesday, May 24, 2022

Daniel Garrie

Discovery Special Master

# Exhibit S



Gibson, Dunn & Crutcher LLP

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#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

May 30, 2022

#### **VIA JAMS ACCESS**

Special Master Daniel B. Garrie DGarrie@jamsadr.com

Re: In re Facebook Consumer Privacy User Prcfile Litigation, JAMS Ref No. 1200058674

Dear Special Master Garrie,

Pursuant to the Special Master's Order Following May 17, 2022 Hearing Regarding Production of Named Plaintiff Data, Facebook submits this updated proposal re: named plaintiff data, reflecting additional terms Facebook has agreed to in response to requests from Plaintiffs in response to Facebook's initial proposal, to assist the Special Master in determining "what, if any" additional named plaintiff data should be produced, as directed in Judge Corley's order dated January 12, 2022 (Dkt. No. 807).

#### Facebook's Proposal For Producing Additional Named Plaintiff Data

As Judge Corley explained in her most recent order on named plaintiff data, issued on January 12, 2022, the Special Master is working with the parties to determine "what, if any" additional named plaintiff data should be produced consistent with Rule 26. Facebook continues to believe that the named plaintiff data that has already been produced, which includes data in all three categories of "discoverable user data" identified in Judge Corley's Discovery Order No. 9, satisfies its obligations under Rule 26. The additional data Plaintiffs seek is neither relevant to their claims nor proportional to the needs of this case because it was not shared or made accessible to third parties.

That said, in an effort to resolve this issue, and consistent with Judge Corley's Discovery Order Nos. 11 and 12 allowing Plaintiffs to test Facebook's position on whether there is additional named plaintiff data that was shared or made accessible to third parties, Facebook proposes the protocol set forth below for producing additional named plaintiff data.

Special Master Daniel B. Garrie May 30, 2022 Page 2

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

As explained in Facebook's March 7, 2022 submission to the Special Master, at a
high level, user data is stored in production systems and the data warehouse.
Accordingly, we
propose to produce additional data from these systems as explained below.

**TAO**. As also explained in the March 7, 2022 submission, TAO is a distributed data store for the social graph. There is an object and associations to that object for all users. *See* Ex. A, Internal Facebook Wiki Regarding TAO Core Concepts. For each named plaintiff, Facebook will produce the user objects and associations to those objects.

May 30, 2022 Update: Facebook will also provide TAO schema for the above data.

**Hive**. As explained in prior submissions to the Special Master, Hive is Facebook's data warehouse. *See* Ex. B, Declaration of Mengee Ji In Support of Facebook Inc.'s Motion For Reconsideration of Special Master's Order Regarding Named Plaintiff Data, ¶ 11. *Id.* ¶ 16. *Id.* ¶ 17.

Id. These searches are subject to many technical and policy limitations which make searching for individual user data unduly burdensome, including that (1)  $(id. \ \ \ \ \ \ \ \ \ \ \ \ \ )$   $(id. \ \ \ \ \ \ \ \ \ \ \ )$   $(id. \ \ \ \ \ \ \ \ \ \ \ \ )$ 

(id. ¶ 22); and (4) data in many Hive tables are in cold storage and would have to be restored in order to be searched and analyzed, see Ex. C, Declaration of Mengee Ji In Support of Facebook Inc.'s Motion For a Protective Order Against Production of API Call Logs, ¶¶ 17-18; Special Master's Nov. 8, 2021 Order Re: Facebook's Motion For Protective Order Against Production of API Call Logs, ¶ 15 ("Special Master Garrie finds that the data in the Mobile Table and Web Table is not reasonably accessible because it is not readily usable in its 'cold storage' state and must be restored to 'warm storage' in order to be searched and analyzed (i.e. usable).").

For these reasons, among others, as reported in its April 11, 2022 submission, Facebook estimates that it would take approximately or around

Special Master Daniel B. Garrie May 30, 2022 Page 3

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

of computational cost to search across the entire Hive data warehouse and extract all data about a single user.

Once the searches have been conducted, and data is returned, the data must be manually reviewed to, among other things, confirm that the data is associated with a particular user and does not include personal data of other users (e.g., user blocking another user) or trade secrets, and does not create system integrity or security concerns.

In light of the above technical limitations and burdens, Facebook proposes to search for and produce the following named plaintiff data from Hive to the extent it exists: (1) specific types of data requested or referenced by Plaintiffs in challenging Facebook's production of named plaintiff data; (2) a sample of data from Hive tables with user identifiers included in Exhibit B to the April 11, 2022 submission; and (3) the only data identified in Exhibit C to the April 11, 2022 submission that has not already been produced to Plaintiffs in the DYI file or otherwise: "set permissions (audience controls on a post)."

#### 1. Specific Types of Data

- *C<sub>j</sub>f-pla-form activity*: DYI includes off-platform activity. Facebook will search for and produce any underlying raw log-level data for off-platform activity provided to Facebook by a third party associated with the named plaintiffs.
- *Ad interests*: DYI includes ad interests. Facebook will search for and produce any underlying raw log-level data associated with the named plaintiffs.
- Ad click data: DYI includes ad click data. Facebook will search for and produce any underlying raw log-level ad clicks data associated with the named plaintiffs.
- *Ad impressions data*: Facebook will search for and produce ad impressions data associated with the named plaintiffs.
- Custom audience data: DYI identifies third parties who have created custom audiences associated with a user. Facebook will search for and produce any more granular information about custom audiences associated with the named plaintiffs, including custom audience type, whether it was used to deliver ads, and when.

<sup>&</sup>lt;sup>1</sup> The contract referencing this data allowed a user to "set permissions (audience controls on a post)" from their phone. Facebook does not use the term "set permissions" to refer to this data.

Special Master Daniel B. Garrie May 30, 2022 Page 4

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

May 30, 2022 Updates: Facebook responds as follows to plaintiffs' additional requests:

- Scope of production. Facebook confirms it will produce the above data regardless of whether it appears in DYI. Facebook also confirms its productions include data "that can be associated" with each named plaintiff and notes
- *Tables and schema*. Facebook will provide the names of the tables from which the five categories of Hive data described above will be produced and how it identified the tables, as well as the schema for the above data.
- Data described by Aldo King. Facebook has already agreed to search for and produce ad interests in Hive, regardless of whether it is appears in DYI.
- Installed apps. Apps installed by a user through Facebook Login (either on or off of Facebook) are listed in DYI, and information about apps installed by users without Facebook Login appears in the Off-Facebook Activity section of DYI.

#### 2. Sampling from Hive tables identified in Exhibit B of April 11, 2022 submission

Given that data in Hive tables are not shared or made accessible to third parties, the significant burden of searching for and producing individual user data from Hive as explained in prior submissions, and that Facebook has already produced nearly a million pages of the named plaintiff data from the DYI system, Hive data is not relevant or proportional to the needs of this case. Facebook nevertheless understands that, as Judge Corley found in Discovery Order Nos. 11 and 12, Plaintiffs are allowed to test Facebook's positions on "sharing and accessibility" by obtaining discovery into what data exists and how it is used. To that end, and consistent with the requirements of relevance and proportionality under Rule 26, Facebook proposes a sampling process.

May 30, 2022 Update: In addition to the above specific categories of data, Facebook will produce named plaintiff data in warm storage for a statistically significant sample of Hive tables identified in Exhibit B of the April 11, 2022 submission. Specifically, Facebook will produce named plaintiff data from 500 tables in Exhibit B to be jointly selected by Facebook and Plaintiffs. Facebook will randomly select 250 tables and Plaintiffs will select 250 tables.

Special Master Daniel B. Garrie May 30, 2022 Page 5

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

#### 3. User data identified in Exhibit C of the April 11, 2022 submission and not in DYI

As shown in Exhibit C of Facebook's April 11, 2022 submission to the Special Master, only two types of user data in the contracts submitted to the Special Master for in camera review are not included in DYI: (1) privacy settings, and (2) "set permissions (audience controls on a post." (1) has already been produced. Facebook will agree to produce (2), including any audience controls on individual pieces of content, from TAO.

May 30, 2022 Update: Facebook produced account-level privacy settings from the named plaintiffs' accounts in 2020. Facebook will produce updated privacy settings for each named plaintiff.

Sincerely,

Rosemarie T. Ring

Basing w Ring

# Exhibit T

Gibson, Dunn & Crutcher LLP

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Rosemarie T. Ring Direct: +1 415.393.8247 Fax: +1 415.801.7358 RRing@gibsondunn.com

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

June 2, 2022

#### VIA JAMS ACCESS

Special Master Daniel B. Garrie DGarrie@jamsadr.com

Re: In re Facebook Consumer Privacy User Prcfile Litigation, JAMS Ref No. 1200058674

Dear Special Master Garrie,

On behalf of Facebook, below we submit answers to the questions in the Special Master's Order Following May 17, 2022 Hearing Regarding Production of Named Plaintiff Data, dated May 24, 2022.

1. How did Facebook identify the Hive tables in Exhibit B to Facebook's April 11, 2022 submission ("Exhibit B") identified as possibly containing user identifiers? Facebook's answer is to include technical details about the process used to identify the Hive tables.

Facebook created the list of tables in Exhibit B to Facebook's April 11, 2022 submission using a system that performs data classification in Facebook's data warehouse. The system takes a sample of the data in a table and classifies the type of data. Tables are scanned periodically to refresh their prediction.

The classification system is able to classify tables with and and the classification system first identifies if a column value is a number. If so, it determines the type of identifier, if any.

The classification system can identify whether a table in cold storage contains a and . The classification system does not search within tables in cold storage for a particular individual user's and nor does it restore data into the live data warehouse.

Special Master Daniel B. Garrie June 2, 2022 Page 2

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

2. Can Facebook provide descriptions for the Hive tables identified in Exhibit B? If so, provide the descriptions.

Facebook will provide plaintiffs the column names for the Hive tables identified in Exhibit B to Facebook's April 11, 2022 submission by June 9, 2022. This data is also the schema for a Hive table. Extracting this information requires running a query for the columns in all of the tables listed in Exhibit B.

3. How long would it take to extract the column names and data types (schema) for the Hive tables. identified in Exhibit B? Facebook's answer is to include a description of the processes and steps it would need to perform to provide the requested data.

See response to Question 2.

4. Did Facebook's search to identify the tables set out in Exhibit B include searching cold storage? If not, why not?

As noted, the list of tables in Exhibit B to Facebook's April 11, 2022 submission includes tables in cold storage.

5. In Exhibit B to Facebook's April 18, 2022 letter submission (Declaration of Mengge Ji), Mengge Ji states "Expand on this statement, include descriptions of the meant by "databases" in this context.

Facebook organizes Hive tables into namespaces, which are essentially separate databases, primarily for capacity-budgeting reasons. These namespaces are attached as **Exhibit A**.

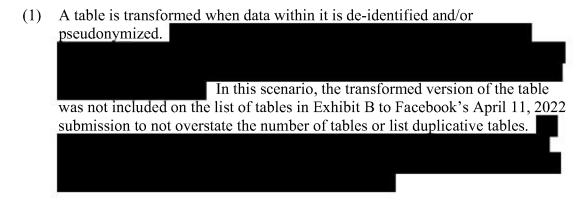
6. One of Facebook's responses in their April 11, 2022 letter submission at page 2 states "tables believed to contain data that is either duplicative or transformed." What does transformed mean in this context? Facebook's answer is to include three examples of "transformation."

As the Special Master observed, the term "transformed data" is standard SQL terminology. Data transformation is the process of converting data from one format to another (such as by changing, removing, or combining data) and is part of a typical data

Special Master Daniel B. Garrie June 2, 2022 Page 3

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

management process, including data warehousing. Three examples of transformation are below:



- (2) A table is transformed when it combines data from multiple tables. One table may store certain demographic information about users. Another table may store certain user actions. A transformed table may combine the data from those two tables to reflect both user demographic information and user actions.
- (3)
- 7. Facebook's April 11, 2022 letter submission at page 2 refers to six categories of tables that were not included in the list in Exhibit B: (1) temporary, test, and error tables; (2) tables used to evaluate system performance; (3) tables that contain no data; (4) tables related to other Meta products (e.g., Oculus, Instagram, and WhatsApp); (5) tables used for infrastructure, operations, and product testing; and (6) tables believed to contain data that is either duplicative or transformed. Provide a description of each of these six categories of tables.
  - (1) Temporary, test, and error tables.

Facebook excluded temporary tables that are created to perform queries without needing to recomputate data. Facebook similarly excluded tables an engineer used to test changes to the table, as these are duplicative of the original table. Facebook excluded tables that were created because of rare errors in the processing of data to the original table.

Special Master Daniel B. Garrie June 2, 2022 Page 4

#### HIGHLY CONFIDENTIAL—ATTORNEYS EYES ONLY

(2) Tables used to evaluate system performance and (5) tables used for infrastructure, operations, and product testing.

Facebook excluded tables that are used to evaluate system performance and/or infrastructure, operations, and product testing. Infrastructure, system performance, and operations tables are used for the operational health of Facebook's systems, such as error logging, performance logging of code, and network performance. Product testing tables are used internally by Facebook product teams in order to test and build new features and products.

(3) Tables that contain no data.

Facebook excluded any table that does not include data. As an example, a table an engineer created but to which no data has been added is a table containing no data.

(4) Tables related to other Meta products (e.g., Oculus, Instagram, and WhatsApp).

Facebook excluded tables from namespaces that relate only to Meta products other than Facebook, such as the instagram, whatsapp, and oculus namespaces.

(6) Tables believed to contain data that is either duplicative or transformed.

Facebook excluded tables that contain duplicative or transformed data. Duplicative data is data that is the same as data in a different table. Transformed data is described above in response to Question 6.

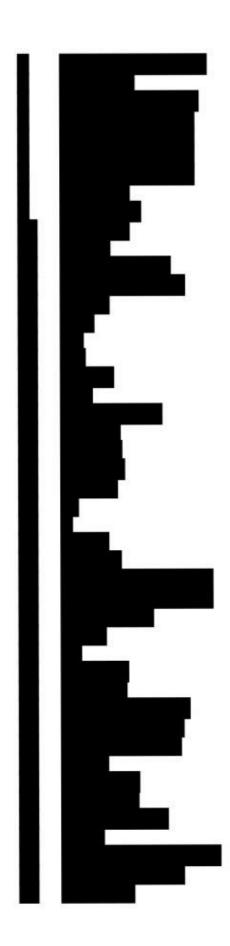
Sincerely,

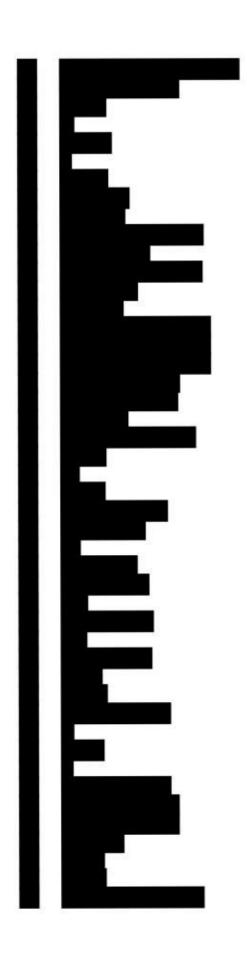
Rosemarie Ring

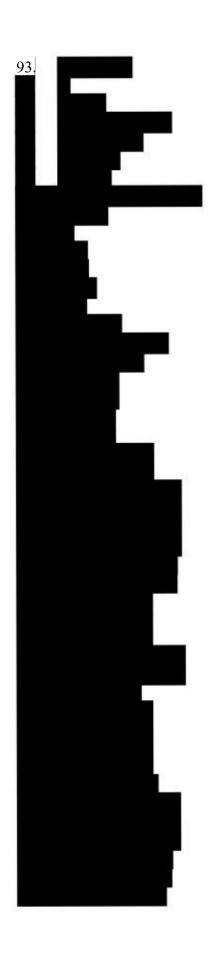
Bosing W Ring

# Exhibit A

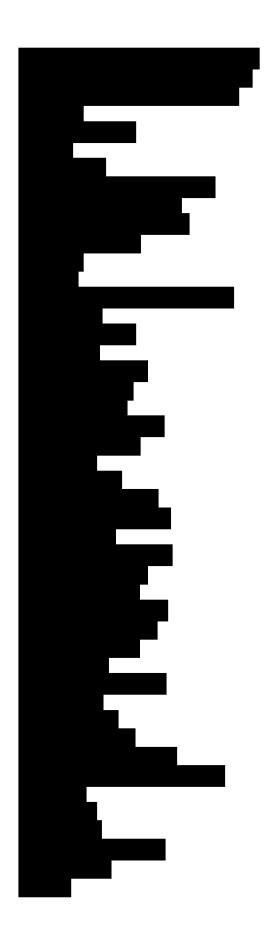
Highly Confidential – Attorneys' Eyes Only

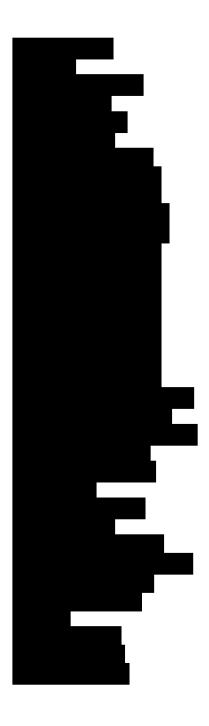












# Exhibit U

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5	Kristin A. Linsley (SBN 154148) klinsley@gibsondunn.com	Facsimile: 213.229.7520
6	Rosemarie T. Ring (SBN 220769) rring@gibsondunn.com	Joshua S. Lipshutz (SBN 242557) jlipshutz@gibsondunn.com
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10		
11	Attorneys for Defendant Facebook, Inc.,	
12		ES DISTRICT COURT
13		RICT OF CALIFORNIA CISCO DIVISION
14		
15	IN RE: FACEBOOK, INC. CONSUMER	CASE NO. 3:18-MD-02843-VC
16	PRIVACY USER PROFILE LITIGATION,	FACEBOOK, INC.'S BRIEF
17	This document relates to:	REGARDING THE PARTIES' NAMED PLAINTIFF DATA PROPOSALS
18	ALL ACTIONS	
19		
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As Judge Corley explained in her most recent order on this issue, the purpose of these proceedings is to determine "what, if any, data from [systems other than DYI] should be produced consistent with [FRCP 26(b)]." Dkt. 807 at 4. Facebook continues to believe that its productions to date, which include all three categories of "discoverable user data" identified by Judge Corley in Discovery Order No. 9 (Dkt. 557), meet this standard, but submitted a proposal agreeing to search for and produce additional data. To further facilitate resolution of the named plaintiff data issue, Facebook agreed to most of Plaintiffs' demands in their response to the proposal and offered reasonable compromises. During the May 17, 2022 hearing to discuss Facebook's proposal and Plaintiffs' response, the Special Master identified three remaining issues: (1) Hive data, (2) apps installed by friends of the named plaintiffs, and (3) cold storage. As explained below, Facebook will agree to provide (2), and the Special Master should accept Facebook's proposed compromise on (1) and defer (3) as premature.

#### 1. Hive Tables

Facebook proposes to search for and produce named plaintiff data from a sample of the

Hive tables identified in Exhibit B to its April 11, 2022 submission. Initially, Facebook

proposed a sample of 200 tables, with Plaintiffs selecting 100 tables and Facebook randomly

selecting 100 tables. In response, Plaintiffs demanded that Facebook produce all data (regardless of
whether it is named plaintiff data) in the first five rows of all

Hive tables. Based on this data,
Plaintiffs would identify what additional data they want, the parties would have one week to resolve
any disputes, and, if no agreement were reached, the issues would go to the Special Master without
briefing. During the May 17, 2022 hearing, Facebook offered a compromise which more than
doubled its proposed sample, from 200 to 500 tables, representing nearly

of the

tables,
with Plaintiffs selecting 250 tables and Facebook randomly selecting 250 tables. To the extent
Plaintiffs' proposal is seeking information about the contents of these Hive tables, Facebook agreed
in its June 2, 2022 submission to provide Plaintiffs with the schema (column names) for all

Hive tables from which the sample would be selected by June 9, 2022.

It is worth noting, again, that Hive data is not accessible to third parties, and therefore is irrelevant to Plaintiffs' claims in this case which are about data sharing. But in the interest of

compromise and to assist the Special Master in resolving this issue, Facebook has agreed to search for and produce named plaintiff data from what the Special Master has generally treated as representing of Hive tables.

Plaintiffs' proposal in response is unworkable. As an initial matter, it does not even seek named plaintiff data. Plaintiffs want all data in the "first five rows" of all Hive tables. Producing this enormous volume of data, most of which is unlikely to include any named plaintiff data, is not relevant or proportional to the needs of this case, and is unduly burdensome. The only reason Plaintiffs offered at the May 17, 2022 hearing for seeking this data was to help Plaintiffs understand the type of data contained in the Hive tables. Facebook's agreement to provide Plaintiffs with the schema (column names) for all Hive tables from which the sample would be selected fully addresses that supposed need.

Plaintiffs' proposal would take months to complete. First, Facebook would have to extract, review, and produce all data in the top five rows of all tables. Then, three weeks later, Plaintiffs would identify an unspecified number of tables from which Facebook would search to determine whether they contain named plaintiff data, produce any such named plaintiff data, meet and confer with Plaintiffs over any disputes, and then bring any disputes to the Special Master for resolution. Depending on the number of tables Plaintiffs choose, it could take months for disputes to be resolved and for Facebook to begin producing data. Once the data extraction process begins, it could take many more months to actually collect the data (depending on the scope of the requested tables). This process is cumbersome, time consuming, and unduly burdensome given that it is also extremely unlikely to provide Plaintiffs with any relevant information, much less information that is probative of their claims.

Facebook's proposal, by contrast, provides Plaintiffs with named plaintiff data from a statistically significant sample of Hive tables (500 out of tables), half of which would be selected by Plaintiff using the schema (column names) for all tables.

#### 2. Apps Installed by *Friends* of the Named Plaintiffs

At the May 17, 2022 hearing, Plaintiffs asked Facebook to produce a list of apps installed by friends of the named plaintiffs. In Discovery Order No. 9, Judge Corley identified three categories of

"discoverable user data": (1) data collected from a user's on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, and (3) data inferred from a user's on or off-platform activity. Apps used by the friends of the named plaintiffs do not fall into any of these categories of data, and therefore are beyond the scope of these proceedings. That said, in the interest of facilitating resolution of this issue, Facebook will provide Plaintiffs data regarding interactions that friends of the named plaintiffs had with businesses/apps using Facebook Login, without identifying which friend interacted with each business/app.

#### 3. Data Cold Storage

As Facebook explained in its June 2, 2022 submission, the tables identified in Exhibit B to its April 11 submission include tables with data in cold storage (including tables with data only in cold storage). A table itself is not "in cold storage" or "in warm storage." Data within a table is in cold or warm storage, and a single table can contain some data in warm storage and some data in cold storage. There is no need to restore data in cold storage to investigate whether tables contain user data. As explained in Facebook's June 2, 2022 submission, the data classification system used to identify the tables in Exhibit B to Facebook's April 11 submission included tables with data in cold storage.

On November 18, 2021, the Special Master ruled that data in cold storage did not need to be produced because it had to be restored to warm storage in order to be searched and therefore was not "reasonably accessible." *See* Special Master's Nov. 8, 2021 Order Re: Facebook's Motion For Protective Order Against Production of API Call Logs ¶ 15. The same is true here. That said, Facebook is willing to consider restoring data from cold storage, but identifying what, if any, data should be restored is premature at this stage. Facebook proposes that the parties first identify which Hive tables will be produced. Once the Hive tables have been identified, Facebook will evaluate which tables, if any, include data in cold storage, and make a proposal regarding what, if any, data it can reasonably restore, search, and produce.

1	Dated: June 6, 2022	GIBSON, DUNN & CRUTCHER, LLP
2		
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13		1050 Connecticut Avenue, N.W. Washington, DC 20036-5306
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15		klinsley@gibsondunn.com Rosemarie T. Ring (SBN 220769)
16		rring@gibsondunn.com Martie Kutscher (SBN 302650)
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18		San Francisco, CA 94105-0921 Telephone: 415.393.8200
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22		Dallas, TX 75201 Telephone: 214.698.3170
23		Facsimile: 214.571.2958
24		Attorneys for Defendant Facebook, Inc.
25		
26		

27

# Exhibit V

Derek W. Loeser (admitted *pro hac vice*) KELLER ROHRBACK L.L.P. 1201 Third Avenue, Suite 3200

Seattle, WA 98101 Tel.: (206) 623-1900 Fax: (206) 623-3384

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Plaintiffs' Co-Lead Counsel

[Additional counsel listed on signature page]

Lesley E. Weaver (SBN 191305) BLEICHMAR FONTI & AULD LLP 555 12th Street, Suite 1600

Tel.: (415) 445-4003 Fax: (415) 445-4020 lweaver@bfalaw.com

Oakland, CA 94607

#### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

IN RE: FACEBOOK, INC. CONSUMER
PRIVACY USER PROFILE LITIGATION

Cas

This document relates to:

**ALL ACTIONS** 

MDL No. 2843 Case No. 18-md-02843-VC

PLAINTIFFS' RESPONSE TO SPECIAL MASTER'S ORDER OF MAY 24 RE: NAMED PLAINTIFF DATA

MDL No. 2843

CASE NO. 18-MD-02843-VC

JAMS REF. No.: 1200058674

Judge: Hon. Vince Chhabra Special Master Daniel Garrie Courtroom: 4, 17th Floor

JAMS Ref. No.: 1200058674

#### I. BRIEF OVERVIEW

The Special Master's May 24, 2022 Order requested briefing on three topics: the issues of Hive table selection; whether Facebook should be compelled to search cold storage; and production of data related to apps installed by friends of Named Plaintiffs.

Since the Special Master first requested this brief, new evidence has come to light in two 30(b)(6) depositions related to those questions: a deposition on evidence preservation ("preservation deposition") and a deposition on Facebook's ability to associate and delete users' data through identifiers ("Topic 4 deposition"). The new evidence shows that: (1) Facebook selected Hive tables and put them in "cold storage" precisely because they were relevant to this litigation; (2) Facebook is capable of searching offline Hive tables using and the tool; (3) the DYI file is not the most complete or usable compilation of user data; and (4) Facebook has withheld from production at least 52 snapshots of Named Plaintiff data using a never-before revealed tool more commonly used to collect user data called which These revelations cannot be reconciled with Facebook's representations throughout the course of this litigation, which have significantly delayed discovery of Named Plaintiffs' data and this litigation more generally.

### A. Facebook Hid Evidence of Preserved in Cold Storage Hive Tables Relevant to This Litigation

The preservation deponent, Michael Duffey, testified that Facebook put Hive tables in "cold storage" as a result of the litigation hold issued in this case. Duffey 30(b)(6) Dep. Rough Tr. at 60:21-25, 64:2-3.<sup>2</sup> This, presumably, is "offline." The very purpose of putting this data into "cold storage" was to preserve them because they are relevant to this case. *Id.* at 66:18-67:1. For example, Mr. Duffey repeatedly pointed to these tables as a potential source of information relating to the data Facebook shared with third parties about users. *See, e.g., id.* at 148:1-3, 148:14-17,

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<sup>&</sup>lt;sup>1</sup> This raises a question as to whether "cold storage" truly makes them inaccessible. Why would Facebook make data *less* accessible if it were preserving it for litigation?

<sup>&</sup>lt;sup>2</sup> Mr. Duffey was unable to answer many specific questions about these tables, including what they are; why they were selected; when they were put into cold storage; and whether they have ever been searched. Duffey 30(b)(6) Rough Tr. at 60:11, 60:21-25, 61:22, 65:3-4. Plaintiffs request production of a 30(b)(6) deponent, Jennifer Allen, on these topics.

153:14-17. Mr. Duffey testified that Facebook's E-Discovery team still has access to these tables while they are in cold storage, that Facebook can produce the structured data from cold storage, and in fact, it has done so on previous occasions. *Id.* at 174:9, 175:7-13, 176:11-13. Facebook told the Special Master that this could not be done. *See* Declaration of Mengge Ji in Supp. of Facebook Inc.'s Mot. for a Protective Order Against Production of API Call Logs ("Ji Decl."), ¶ 18 ("Tables in cold storage cannot be reviewed or analyzed while they remain in cold storage.").

The Topic 4 deponent, Mike Clark, who previously appeared in a Special Master hearing, testified that offline Hive tables can be queried using and the tool. Clark 30(b)(6) Dep. Tr., 86:20-89:23. Clark further testified that Hive tables can be searched either by or Id. at 99:9-18. The table that contains the is available and queryable via TAO. Id. at 101:16-102:16. If Facebook knows the table and its location, it can query the specific table, including for Id. at 114:10-14. (Ex. 334 to the Clark 30(b)(6) Dep. is a multipage document from 2010 that "contains all of the recently used Hive tables as defined by any table which has at least one user in the past 30 days as of 5/12/2010."). Plainly, Facebook has the ability to produce summary documents of Hive tables with their fields (which includes UIDs, among other identifiers). But Facebook has repeatedly refused to conduct any searches of Hive, using as an impediment that it would be impossible to search all of Hive and Facebook cannot identify which tables to search. See Exhibit A.

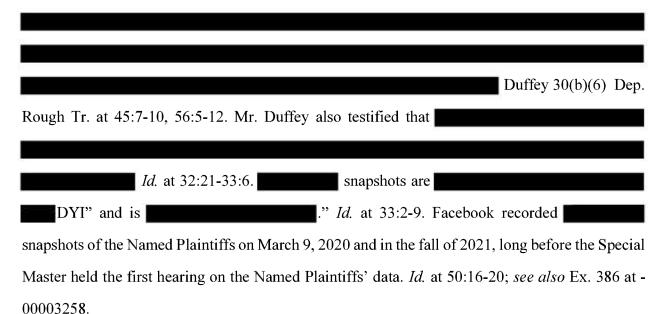
### B. Facebook Improperly Withheld Snapshots of User Data Preserved with the Tool, Among Other Data.

For years, Facebook has insisted that the DYI files it has produced contain the "most complete compilation of data associated with the Named Plaintiffs' accounts." *See* Exhibit A. Facebook fiercely resisted discovery into whether this was true. *See*, *e.g.*, Facebook's November 15, 2021 Response to Objection Regarding Named Plaintiffs' Data Briefing (falsely stating that the DYI file was comprehensive and attacking Plaintiffs for probing that representation).

Mr. Duffey's testimony, however, indicates that the DYI files are *not* complete. He explained that "snapshots contain information

Duffey 30(b)(6)

Dep. Rough Tr. at 31:11-13; see also Exhibit 386 at -00003258. Critically, he testified that they



Plaintiffs have long requested that more usable versions of DYI files be produced and sought more information about unproduced data. Dkt. No. 526 at 7 (noting the DYI file is incomplete and that format of production "obscures" information about the Named Plaintiffs' privacy settings). Mr. Duffey's testimony makes clear that Facebook has (1) falsely testified that the DYI file was the most complete collection of user data; (2) failed to inform the Court of the existence of the tool most commonly used to produce user data; (3) moved Hive tables to "cold storage" precisely because they are relevant to this litigation, without revealing their existence; and (4) proposed an arduous and unrealistic process for Plaintiffs and the Special Master to guess at which Hive tables might possibly contain relevant data, including a "random" selection of 500 tables, while failing to disclose that Facebook had already identified tables as relevant and preserved them offline.

#### II. PLAINTIFFS' INITIAL PROPOSAL

A. Facebook Must Immediately Search the Hive Tables with All Identifiers, Including Associated with the Named Plaintiffs.

Facebook should have voluntarily disclosed the existence of the Hive tables during ESI discussions in 2019. At the least, it should have disclosed the tables to the Special Master.

MDL No. 2843 Case No. 18-md-02843-VC JAMS Ref. No.: 1200058674 Consider the direct questions posed by the Special Master over the past six months and compare Facebook's evasive responses. The Special Master ordered Facebook to identify "a list of data sources that may contain information related to the Named Plaintiffs," and, more specifically: "[i]dentify a list of Hive tables containing columns that store a period." It is to include tables that were active during the relevant time period." See Exhibit A. Facebook artfully answered other questions and did not identify the tables. Id. Even Facebook's May 30 data production proposal did not disclose the existence of those tables, although it indicated with no specificity that cold storage tables are included in Exhibit B. The May 30 submission proposed only producing data in "warm storage for a statistically significant sample of Hive tables." So, even though Facebook knew that it had already determined that relevant Hive tables exist, and had preserved them, it repeatedly proposed that the parties and the Special Master play a guessing game about whether Hive tables contained relevant Named Plaintiff data. All the while, it knew that the potentially most relevant tables would be excluded from the tables to be searched. Duffey 30(b)(6) Dep. Rough Tr. at 74:18-23, 60:21-25, 153:14-17. Months have passed as this inquiry has dragged on.

Furthermore, Mr. Clark's testimony makes perfectly clear that "offline" tables can be searched. Mr. Duffey also appeared to agree that such tables can be searched, using tools such as and Duffey 30(b)(6) Dep. Rough Tr. at 61:5-8, 176:11-13; Ex. 386 at -00003259 ("..."). Yet Facebook has opposed searching these records and stated that while in cold storage, data cannot be reviewed or analyzed. *See* Ji Decl., ¶ 18.4 Regardless, however inaccessible Facebook may have made this data by putting it in cold storage or failing to cease the Hive Anon process, Facebook did so at its own

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<sup>&</sup>lt;sup>3</sup> The most generous explanation is that Mr. Duffey, who testified that he was prepared for his June 2 deposition in "~38 hours of meetings; 10 sessions; over 4 weeks," was not in touch with the lawyers who prepared the May 30 submission to the Special Master. Ex. 386 at -00003256.

<sup>&</sup>lt;sup>4</sup> Mr. Duffey consulted with Ms. Ji in preparation for his deposition. Ex. 386 at -00003256. Ms. Allen is the most knowledgeable person about the tool and is an E-Discovery team member. Duffey 30(b)(6) Dep. Rough Tr. at 29:19-20, 44:17-18. Plaintiffs propose that each of them be deposed on these topics immediately.

risk, and it should bear all costs of re-identifying and producing all Named Plaintiff data in the Hive tables and any other tables that contain Named Plaintiff data, whether or not in cold storage. Plaintiffs thus propose that the process begin with a search of the Hive tables, and that Facebook produce schemas, protos and fields for those tables. In addition, Plaintiffs propose that Facebook provide further explanation of the Hive namespaces in Exhibit A to the May 30 submission and the schema/fields of all Hive tables and internal developer documentation sufficient to explain what is in the fields.

### B. Facebook Must Immediately Produce All Named Plaintiff Data, Including Snapshots, and Certify That It Has Produced All Such Data That It Has Preserved.

The preservation deposition revealed that Facebook has also misstated its ability to search for Named Plaintiffs' data. For the first time, Facebook admitted that the tool it regularly uses to preserve and produce information when it receives a subpoena about a user was not used to produce Named Plaintiffs' data in this case. Duffey 30(b)(6) Dep. Rough Tr. at 32:21-33:6. Facebook has repeatedly, and falsely, affirmed that the "DYI file for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user." *See* Exhibit A. Plaintiffs request production of all withheld snapshots and a deposition of someone knowledgeable to explain why those files were withheld and what else exists.

### C. Facebook Must Produce Evidence Showing the Apps Installed by the Named Plaintiffs' Friends, or Else Formally Admit That It Cannot Do So.

It is essential that the Named Plaintiffs learn which apps their friends installed—otherwise, it may not be possible to determine what third parties accessed the Named Plaintiffs' data, what data was accessed, and how it was used. For that reason, Facebook must produce evidence showing which apps were installed by the Named Plaintiffs' friends. If it cannot do so, it must admit—in a

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<sup>&</sup>lt;sup>5</sup> Facebook proposes the unworkable idea that responsive evidence should be selected only if it is "statistically significant." Proposing this metric is baffling, as Facebook has provided no information about the amount or substance of the data in each table. Counting the number of tables and calculating the number that equals ten percent of the total has zero probative value. This is a privacy class action in which the key questions are (1) *what* information was collected about users (the magnitude, subject matter and scope of collection); and (2) what Facebook did with it. With these underlying facts established, the parties will litigate whether that conduct was disclosed and whether Facebook obtained knowing consent from users.

binding and admissible manner—that it is incapable of doing so.<sup>6</sup>

#### III. PLAINTIFFS' PROPOSED RELIEF

First, by June 10, 2022, Facebook must produce all collected and/or preserved data relating to the Named Plaintiffs, including but not limited to all snapshots, and identify, in writing and with specificity, any collections it seeks to withhold.

Second, by June 17, 2022, Facebook must produce all schemas, fields, and protos for the Hive tables identified in the Duffey 30(b)(6) deposition and search these tables using all Named Plaintiffs' identifiers, including UIDs, and any other identifiers.

Third, by June 10, 2022, Facebook must provide information sufficient to describe the contents of the namespaces identified in Exhibit A to its May 30 submission, and provide schema, fields and protocols, or internal developer documentation to describe the contents of the Hive tables similar to Ex. 334 of the Clark 30(b)(6) Deposition.

Fourth, Mengge Ji and Jennifer Allen should sit for two 3-hour depositions next week.

Fifth, all Gibson Dunn partners engaged at any time on this matter, as well as in-house counsel Sandeep Solanki, Natalie Naugle, and Ian Chen, must submit affidavits attesting to whether Facebook has produced all ESI, data, content, and information for the Named Plaintiffs that it has preserved, including explanations as to why Facebook has failed to identify or produce the preserved. Hive tables or the snapshots to date.<sup>7</sup>

Plaintiffs may seek evidentiary preclusion orders based on Facebook's misconduct.

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<sup>&</sup>lt;sup>6</sup> To be clear, other questions about Plaintiffs' data remains, including where partner categories are stored; what happened to data for deprecated systems; and other issues.

<sup>&</sup>lt;sup>7</sup> In addition to Gibson Dunn lawyers, Mr. Duffey identified Sandeep Solanki and Natalie Naugle as in-house counsel involved in preservation of ESI in response to the filing of this lawsuit. Duffey 30(b)(6) Dep. Rough Tr. 7:22-8:18.

Dated: June 6, 2022 Respectfully submitted,

#### KELLER ROHRBACK L.L.P.

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#### ATTESTATION PURSUANT TO CIVIL LOCAL RULE 5-1(h)(3)

I, Lesley E. Weaver, attest that concurrence in the filing of this document has been obtained from the other signatory. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 6th day of June, 2022, at Oakland, California.

/s/ Lesley E. Weaver Lesley E. Weaver

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## **EXHIBIT A**

## EXHIBIT A CHART OF FACEBOOK'S MISSTATEMENTS TO THE SPECIAL MASTER AND TO THE COURT REGARDING THE NAMED PLAINTIFFS' DATA

Date	<b>Court Submission</b>	Facebook's (False) Representations About the	Testimony of Facebook's 30(b)(6)
Date		Named Plaintiffs' Data	Deponents <sup>1</sup>
August 13, 2020	Joint Status Update	Facebook states: "To find the data Plaintiffs seek, Facebook would need to identify every single internal analysis that uses Platform data and attempt to de-anonymize every data point within those analyses to determine if any provided by the Named Plaintiffs is among the data. Even a large team of engineers working full time for several years likely cold not identify all of the information Plaintiffs seek." Dkt. No. 495 at 6-7.	52 snapshots taken with the tool are in Facebook's possession but have not been produced. Hive tables relating to the litigation were set aside and preserved. See Duffey 30(b)(6) Dep. Rough Tr. at 153:14-16 ("[W]e have Hive data tables preserved and on legal hold for this matter."); Id. at 147:16-19 ("We've taken snapshots indirectly the tool and the DYI tool [] for each of the named plaintiffs that had data available at the time of the snapshot."); Ex. 386 at ADVANCE-META-00003259 ("Hive tables on legal hold.").  Neither the snapshots nor the preserved Hive tables were disclosed until last Thursday, June 2, 2022 in a 30(b)(6) deposition. It would not have taken a large team of engineers working full time for several years to search and produce Named Plaintiffs' data contained in them.
October 8, 2020	Facebook's Reply Brief ISO Request to Enforce the Partial Stay of Discovery in PTO No. 20	Facebook argued that Plaintiffs' request for additional data relating to the Named Plaintiffs' concerned data outside the scope of any live theory of this case and would require it to search "millions of disaggregated data sets." Dkt. No.	52 snapshots taken with the are in Facebook's possession but have not been produced. See Duffey 30(b)(6) Dep. Rough Tr. at 147:16-19 ("We've taken snapshots indirectly the

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<sup>&</sup>lt;sup>1</sup> Plaintiffs will provide the Special Master with transcripts upon request.

Date	Court Submission	Facebook's (False) Representations About the	Testimony of Facebook's 30(b)(6)
		Named Plaintiffs' Data	Deponents <sup>1</sup>
		537 at 6. It also stated that additional data "cannot reasonably" be identified. <i>Id.</i> at 9.	tool and the DYI tool [] for each of the named plaintiffs that had data available at the time of the snapshot."); Ex. 386 at ADVANCE-META-00003258 ("In the aggregate, FB preserved 52 snapshots across for the named plaintiffs when identified as Admins.").
			Hive tables relating to the litigation were set aside and preserved. See Duffey 30(b)(6) Dep. Rough Tr. at 153:14-16 ("[W]e have Hive data tables preserved and on legal hold for this matter."); Ex. 386 at ADVANCE-META-00003259 ("Hive tables on legal hold."). Facebook did not disclose this to the Special Master, the Court, or Plaintiffs in any of the multiple hearings and briefings on this issue, and it was not revealed until last Thursday, June 2, 2022 in a 30(b)(6) deposition.
October 8, 2020	Facebook's Reply Brief ISO Request to Enforce the Partial Stay of Discovery in PTO No. 20	"There is no way for Facebook to run a centralized search for a user's ID, random ID, or any 'hashed data' identifiers across millions of data sets[.]" Dkt. No. 537 at 10.	"[I]f I know the table and in working with a specific table, yes, I can query for a specific or Clark 30(b)(6) Dep. Tr. at 99:9-18.  By failing to disclose that Facebook had already identified Hive tables relevant

Date	<b>Court Submission</b>	Facebook's (False) Representations About the Named Plaintiffs' Data	Testimony of Facebook's 30(b)(6) Deponents <sup>1</sup>
			to the litigation, which can be searched for and among other identifiers, Facebook delayed and complicated the search for and production of Named Plaintiffs' data.
October 18, 2021	Decl. of Mengge Ji ISO Facebook Inc.'s Motion for a Protective Order Against Production of API Call Logs	"Tables in cold storage cannot be reviewed or analyzed while they remain in cold storage." Ji Decl. at ¶ 18.	If the tables were put in cold storage for purposes of preserving them for litigation, then Facebook must be able to produce data from those tables. <i>See</i> Duffey 30(b)(6) Dep. Rough Tr. at 175:10-13 ("I am aware of our E-Discovery data science team producing structured data in matters. Whether or not it was taken out of cold storage or not, I'm not clear on that process."); <i>Id.</i> at 176:7-13 ("When data is put into cold storage, only the E-Discovery team would have access to that data.").
October 28, 2021	Facebook's Separate Statement in Support of Facebook's Opposition to Plaintiffs' Motion to Compel Production of Named Plaintiffs' Content and Information	"Facebook subsequently repeatedly informed Plaintiffs and the Court that it had produced the most complete compilation of data associated with the Named Plaintiffs' accounts, including on July 30, 2020 (Dkt. 484), August 13, 2020 (Dkt. 495), and September 18, 2020 (Dkt. 515)." Facebook's description of its own statements to the Court, Separate Stmt. at 2.	These repeated statements were false. The DYI files do not contain information about users' privacy settings, Pages, Groups, or adversities interests  The files are also in a

Date	Court Submission	Facebook's (False) Representations About the	Testimony of Facebook's 30(b)(6)
		Named Plaintiffs' Data	Deponents <sup>1</sup>
October 28, 2021	Declaration of Ben Mitchell ISO Facebook's Opp. to Pls' MTC Production of Named Plaintiffs' Content and Information	"The DYI file for each individual user represents the most complete and best compilation of data Facebook maintains associated with that user, and the best available compilation of the data about that user in the Social Graph, in a human-readable and producible form." Mitchell Decl. at ¶ 5.	Duffey 30(b)(6) Dep. Rough Tr. at 56:5-8; see also:  DYI  Id. at 31:11-13;  "I know that
November 15, 2021	Facebook's Response to Objection Regarding Named Plaintiffs' Data Briefing	"Facebook explained repeatedly that the Download Your Information ('DYI') files it produced satisfied its production obligations under Discovery Order 9 and the technical reasons why this is so." Facebook's Response at 1.  "And a user's DYI file contains a human-readable download of the most complete set of data about that user in the Social Graph (and more)." <i>Id.</i> at 2.	DYI has available to it as a download In a, you know, like  "Id. at 32:21-33:9;  "I believe that  Id. at 45:7-10;  "I do believe that the  Id. at 56:9-12;  "I believe there are

Date	Court Submission	Facebook's (False) Representations About the Named Plaintiffs' Data	Testimony of Facebook's 30(b)(6) Deponents <sup>1</sup>
			Advertising accounts." Ex. 386 at ADVANCE-META-00003258.
December 10, 2021	Decl. of David Pope ISO Facebook's Mot. for Reconsideration of the Special Master's Order Re: Named Plaintiffs' MTC Production of Plaintiff Data	In response to the Special Master's request for Facebook to provide "a list of data sources that may contain' user data," Facebook submitted the declaration of David Pope identifying "149 data systems identified as containing user data[.]" Pope Decl. at ¶¶ 5, 9.	This submission was grossly misleading, including because it failed to identify the 52 snapshots taken with the tool of the Named Plaintiffs or the Hive tables relating to the litigation were set aside and preserved. Duffey 30(b)(6) Dep. Rough Tr. at 153:14-16 ("[W]e have Hive data tables preserved and on legal hold for this matter."); <i>Id.</i> at 147:16-19 ("We've taken snapshots indirectly the tool and the DYI tool [] for each of the named plaintiffs that had data available at the time of the snapshot.").
December 10, 2021	Decl. of Mengge Ji ISO Facebook's Mot. for Reconsideration of the Special Master's Order Re: Named Plaintiffs' MTC Production of Plaintiff Data	Ji Decl. at ¶ 21.	"I can search a table, if I know a specific table and I'm looking for a specific [.]" Clark 30(b)(6) Dep. Tr. at 87:19-21.  "[I]f I know the table and in working with a specific able, yes, I can query for a specific or

Date	Court Submission	Facebook's (False) Representations About the Named Plaintiffs' Data	Testimony of Facebook's 30(b)(6) Deponents <sup>1</sup>
		Nameu Famenis Data	that it could search using Named Plaintiffs' and UIDs, among other identifiers.
December 22, 2021	Motion for Leave to File and For Stay Pending Appeal of the Special Master's Amended Order Re: Plaintiffs' Motion to Compel Production of Plaintiff Data	In response to the Special Master's Initial Order requiring Facebook to provide "a list of data sources related to the Named Plaintiffs," Facebook provided a list of "potential data sources but explained (and substantiated with uncontroverted declarations) that compiling the remaining information would take more than "Mot. for Leave at 3-4.	These statements were misleading. Facebook did not inform the Special Master about either the Hive tables preserved for this litigation, or the 52 snapshots preserved using the tool. See Duffey 30(b)(6) Dep. Rough Tr. at 60:21-25 ("I understand that there are Hive tables placed on legal hold for the Cambridge Analytica matter."); Id. at 50:16-20 ("
March 7, 2022	Letter from Rose Ring in Response to Special Master's February 21 Order re: Plaintiff Data	"[T]he DYI system includes all three categories of data: (1) data collected from a user's on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, and (3) data inferred from a user's on or off-platform activity. So the issue is whether Facebook should produce more data in categories (1), (2), and (3) from systems other than DYI, which we understand is the focus of the Special Master's remaining questions." Mar. 7, 2022 Ltr. from R. Ring at 1.	those were also captured in a snapshot.").  The reason the Special Master was focusing on the DYI tool is because Facebook had repeatedly told the Court, incorrectly, that it was a complete source for user information.
March 9, 2022	Special Master Hearing	"And so there becomes a technical feasibility because not all that storage that sits in Hive is online. And so that would – it becomes a technical feasibility challenge to do that full discovery	is a tool to help data scientists and data engineers, where they know where data lives in Hive, to be able to write a query to do analysis or or analytics on a

Date	Court Submission	Facebook's (False) Representations About the Named Plaintiffs' Data	Testimony of Facebook's 30(b)(6) Deponents <sup>1</sup>
		across everything." Mar. 9, 2022 Special Master Hearing Tr. at 115:2-9.	subset of data." Clark 30(b)(6) Dep. Tr. at 89:19-23.
April 11, 2022	Letter from Rose Ring in Response to Special Master's March 9 Order re: Plaintiff Data	Facebook responded to the Special Master's request for information about Hive tables, and identified "Hive tables that store user identifiers with data as it enters Hive." Apr. 11, 2022 Ltr. from R. Ring at 2.	"I understand that there are tables placed on legal hold for the Cambridge Analytica matter." Duffey 30(b)(6) Dep. Rough Tr. at 60:21-25.  "Hive data that is on legal hold to prevent it from being deleted or modified." <i>Id.</i> at 64:2-3.  "We're talking about Hive tables. I would imagine that Hive tables were put on legal hold starting in 2018 and have, you know, as additional you know, again, as additional Hive tables are identified relevant to a matter, we work with our our in-house and outside counsel and our data science team and Ediscovery to place those Hive tables on legal hold." <i>Id.</i> at 66:18-67:1.

# Exhibit W

#### **GIBSON DUNN**

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Client: 30993-00116

June 16, 2022 VIA JAMS ACCESS

Dear Special Master Garrie, Below Facebook responds to the Special Master's JAMS message dated June 10, 2022 stating "Facebook is to respond to the issues regarding production of Named Plaintiff data in and the Hive tables raised in Plaintiff's June 6, 2022 brief." After months of proceedings, the parties submitted proposals regarding the production of additional Named Plaintiff data. The Special Master held a hearing on May 17, 2022, during which he identified three areas of disagreement. On May 24, 2022, the Special Master ordered the parties to submit simultaneous briefing on those issues, but rather than address them, Plaintiffs focused on new issues based on supposed "new evidence." Plaintiffs' "new evidence" is largely irrelevant to these proceedings, and Plaintiffs also misconstrue and misinterpret the testimony they cite. Specifically, Plaintiffs point to data a witness testified was preserved from a system called and Hive. Even though the witness did not testify that the preserved data is Named Plaintiff data or Named Plaintiff data that has not been made available to Plaintiffs, they assume that is the case and based on those assumptions make false accusations and an unprecedented demand for affidavits from more than a dozen attorneys. Facebook addresses each of these issues in turn below. 1. is a tool created to respond to law-enforcement subpoenas, https://www.facebook.com/safety/groups/law/guidelines/, which are not at issue in this case. Law enforcement can request information in response to lawful subpoenas, through Facebook's Law Enforcement Online Request System. Law enforcement subpoenas must be narrowly tailored and particularized, and the relevant categories of data (and only those) are provided through is not designed or intended for use by Facebook users or in private litigation. That said, Facebook preserved data from connection with this case out of an abundance of caution. To be clear. data largely overlaps with data already produced. Nonetheless, Facebook agrees to produce Named Plaintiff data preserved from for current named plaintiffs. Facebook addresses Plaintiffs' accusations below: **DYI.** Plaintiffs say testimony about undermines statements that DYI is the "most complete compilation of data associated with the Named Plaintiffs' accounts" because . There is no inconsistency. DYI is the "most complete compilation of data associated with the Named Plaintiffs" accounts." In fact. Data associated with a user's account preserved in a snapshot largely tracks a subset of the data in DYI or otherwise available to the user. In some instances data

and DYI

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produced the data as

(neither of which are relevant to these Named Plaintiff data proceedings). For (1) an example is that a
For (2) an example is that Facebook
In Discovery Order No. 9, Judge Corley identified three categories of "discoverable user data" about the Named Plaintiffs: (1) data collected from a user's on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, and (3) data inferred from a user's on or off-platform activity. Data about other users and analyses prepared for law enforcement do not fall into these categories. Facebook also cannot produce other users' data without their consent, consistent with its obligations to those users including under the Stored Communications Act.
Plaintiffs say Facebook withheld snapshots. This is false. Facebook produced snapshots of the Named (attached as <b>Exhibit A</b> ).
Plaintiffs say that, unlike DYI, contains information about As explained above, the snapshot of an account contains information about that is not Named Plaintiff data. This data does not fall into any of the three categories identified in Discovery Order No. 9.
Plaintiffs say Facebook withheld Named Plaintiff data from the snapshots about This is wrong. A user's DYI file contains information about their own activity in Groups and on Pages. The snapshots contain
Plaintiffs suggest Facebook withheld Named Plaintiff data from snapshots about This is also wrong. Like DYI, a snapshot of a user's account The cited testimony refers to snapshots of
. This is a consumer class action, and Business Pages are not at issue. In any case, the categories of data in a snapshot of an with categories of data in DYI.
than DYI. Plaintiffs misconstrue the testimony. The witness explained the specific categories of the data provided in response to a subpoena can be produced to law enforcement as while DYI is "lots of individual files." Trans. at 51:19-23. DYI contains multiple files so a user can download individual categories and easily navigate the results. For litigation, individual files are also more usable. Most DYI files produced in this case are tens of thousands of pages; some are hundreds of thousands of pages. If Facebook

\* \* \*

it would be extremely difficult to navigate and use.

Again, Facebook will produce the Named Plaintiff data preserved in current Named Plaintiffs. As disclosed previously, Facebook added new categories of data to the DYI system since producing certain Named Plaintiffs' DYI data. Facebook explained months ago that it is "happy to produce updated versions of DYI files . . . but has understood that Plaintiffs are not interested in additional DYI data, since it is 'already available to Plaintiffs.'" *See, e.g.* Dkt. 911 at 35 n.22. Although Plaintiffs have not responded, Facebook will produce updated DYI files, to avoid any confusion as to what data is available to users.

#### 2. Hive Tables

Facebook's corporate designee testified that Facebook preserved various Hive tables in connection with this and related litigation. Plaintiffs leap to the conclusion that all of these tables contain Named Plaintiff data and say Facebook improperly failed to disclose the tables. Again, even though Plaintiffs' assumptions are wrong, Facebook agrees to produce the schema (i.e. column names) for preserved tables containing user identifiers and will meet and confer with Plaintiffs regarding a production of Named Plaintiff data from those tables. This overlaps with information and data Facebook already agreed to provide. Below Facebook addresses Plaintiffs' accusations about preserved Hive tables.

Named Plaintiff Data. Plaintiffs say Facebook should have disclosed a list of preserved Hive tables because such a list would have identified the most relevant Named Plaintiff data. This is wrong. Tables in Hive were preserved in connection with this litigation and related litigation for a number of reasons, many of which have nothing to do with Named Plaintiff data. Of the tables identified, a minority contain user identifiers, and several of those tables were put on hold in connection with Facebook's April 18, 2022 proposal to produce categories of data requested or referenced by Plaintiffs.

Searchability. Plaintiffs say testimony that Hive tables can be searched by undermines prior representations that Plaintiffs' requests would require searching "millions of disaggregated data sets." There is no inconsistency.

The cited statements concern a broader demand that Plaintiffs narrowed. Plaintiffs initially requested every data point at Facebook that might relate back to a Named Plaintiff in any way, including aggregated/fully anonymized data. Facebook explained that satisfying this request would be technically infeasible as it would require reverse engineering the underlying sources of data in millions of tables that are not reasonably capable of being identified to a user. For example, a table could log the number of Facebook users who log into Facebook each hour, to track peak activity for capacity budgeting, without any data about which users logged in each hour. Given the breadth of the request, Facebook explained "[e]ven a large team of engineers working full time for several years likely could not" "identify all of the information plaintiffs seek." That is true.

Before the Special Master, the parties have discussed a narrower set of data that is capable of being associated with a user's account—tables that contain user identifiers.

Cold Storage. Plaintiffs say testimony that "offline" tables can be searched undermines representations about the searchability of data in cold storage. The testimony referred to Hive, not cold storage. As Facebook has explained, Hive is "a data system that is used for offline data storage and analysis," see 5/11/2022 Submission p. 2, unlike TAO, which supports the online production environment. Plaintiffs also say testimony undermines representations that data in cold storage cannot be produced. Facebook did not represent that data in cold storage cannot be produced. It argued it should not be required to restore tables consisting of hundreds of petabytes of data, in part because it had accessible (and agreed to produce), summary versions of the data. The Special Master agreed. See Nov. 8, 2021 Order Re: Facebook's Motion For Protective Order Against Production of API Call Logs.

#### 3. Request for Affidavits from Counsel

Based on the accusations above, Plaintiffs make an unprecedented demand for affidavits from Facebook's in-house legal team and Gibson Dunn partners to have worked on this matter regarding Facebook's production of preserved Named Plaintiff data. There is no basis for a request of this nature, which is based on Plaintiffs' mischaracterizations of the record, and has nothing to do with the outstanding areas of dispute regarding the parties' Named Plaintiff data proposals. In any case, Plaintiffs received corporate testimony about Facebook's preservation efforts, and, as explained above, agrees to produce data preserved in sources to which the witness testified. This request should be denied.

Sincerely, /s/ Heather L. Richardson Heather L. Richardson

# Exhibit X

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#### UNITED STATES DISTRICT COURT NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

IN RE: FACEBOOK, INC. CONSUMER PRIVACY USER PROFILE LITIGATION

This document relates to:

**ALL ACTIONS** 

MDL No. 2843 Case No. 18-md-02843-VC

PLAINTIFFS' FURTHER RESPONSE RE: NAMED PLAINTIFF DATA ADDRESSING RECENTLY REVEALED PRESERVED DATA

MDL No. 2843

CASE No. 18-MD-02843-VC

JAMS REF. No.: 1200058674

Judge: Hon. Vince Chhabra Special Master Daniel Garrie Courtroom: 4, 17th Floor

JAMS Ref. No.: 1200058674

This brief is submitted pursuant to the Special Master's June 10 and 14 emails which granted Facebook the right to respond to Plaintiffs' inquiries regarding Named Plaintiff data in Hive tables, and Plaintiffs the right to submit a brief by June 20, 2022. Facebook's letter of June 16, 2022 offers argument from counsel about what is contained snapshots with few citations to evidence, testimony, or documents. In contrast, Plaintiffs' submission rested entirely on the sworn testimony of Facebook's corporate representative, Michael Duffey, who proffered binding testimony on behalf of Facebook regarding what was preserved by Facebook in this action after March 2018 when the Cambridge Analytica scandal broke. Mr. Duffey testified: • "We've taken snapshots in the tool and the DYI tool [] for each of the named plaintiffs that had data available at the time of the snapshot." Duffey 30(b)(6) Dep. Tr. at 158:1-4; " *Id.* at 40:4-6; "I believe that *Id.* at 53:25-55:2; "I do believe that the ." *Id.* at 65:1-4; [.]" *Id.* at 154:5-6. "I believe there are Moreover, ahead of his testimony, Mr. Duffey prepared notes which describe the snapshots as "ha[ving] (compared to DYI)" and Ex. 386 at "also ha[ving] ADVANCE-META-00003258. Thus, when Facebook's letter claims throughout that "Plaintiffs suggest" and "Plaintiffs say," this is erroneous. Plaintiffs did not say; Facebook did, as shown by the sworn testimony of Facebook's corporate representative. Compare June 16, 2022 Letter from H. Richardson re Named Pls' Data at 2 ("June 16 Letter") ("Plaintiffs say deposition testimony shows a than DYI") with Duffey 30(b)(6) Dep. Tr. at 41:20-24 ("[T]he] than DYI has available to it as a download."). Facebook offers no explanation for its failure to identify these files, let alone produce them, years ago. Facebook claims that "the relationships between a user" is not "Named Plaintiff data." June 16 Letter at 2 (with no citation). But clearly actions between the Named Plaintiffs and other users would encompass friends, and the unconsented-to sharing of friend data is centrally relevant snapshots' information to this case. Facebook appears to be saying that none of the (1) data collected from a user's

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on-platform activity, (2) data obtained from third parties regarding a user's off-platform activities, or (3) data inferred from a user's on or off-platform activity. This seems unlikely. In any event,

Facebook has agreed to produce "the Named Plaintiff data preserved in for current Named Plaintiffs." *Id.* at 2. It is unclear if Facebook is referring to all 52 snapshots preserved over time for the Named Plaintiffs, or if that is in addition to other data preserved in Plaintiffs seek both and request that the Special Master order production by Friday, June 24, 2022. 1

With regard to the Hive tables, Facebook is equally opaque, citing no documents or evidence. Mr. Duffey testified that Facebook has "Hive data tables preserved and on legal hold for this matter." Duffey 30(b)(6) Dep. Tr. at 163:24-164:1; see also Ex. 386 at ADVANCE-META-00003259 (confirming "Hive tables on legal hold."). Facebook offers no explanation for why it did not earlier disclose the Hive tables, while saying it might produce column names for preserved tables containing user identifiers. Facebook offers no date by which it will do so. Facebook writes that Plaintiffs "assume" that the Tables relate to the Named Plaintiffs. This is incorrect. The parties have been working with the Special Master for months to find an efficient way to identify Hive tables to search for Named Plaintiff data. And FB-CA-MDL-03452017 (attached as Exhibit A) shows that Facebook creates descriptions of Hive tables in the regular course of business. Pages 4-5 of this document provide an example of what Plaintiffs seek here. At no point prior to the deposition of Mr. Duffey did anyone from Facebook, including counsel, inform the Special Master or Plaintiffs that Facebook had already identified Hive tables and preserved them for this litigation. They are the obvious place to start searching.

Plaintiffs request an order requiring a production date of Friday, June 24, 2022 for the Hive schema, fields and documents sufficient to describe the contents of the tables. Plaintiffs further request an order to show cause why Facebook should not be ordered to produce all Hive tables referencing user identifiers immediately, given that Facebook did not earlier advise the Special Master or Plaintiffs of their existence.

Because the representations of Facebook's counsel in their briefing are inconsistent with Facebook's sworn testimony, Plaintiffs propose that affidavits are an appropriate remedy to ensure that Facebook has accurately identified all potential sources of Named Plaintiff data.

#### **Cold Storage**

With regard to searchability and cold storage, Facebook's letter continues to aver that "Plaintiffs say," and the letter ignores Facebook's own sworn testimony: "

.]" Mike Clark 30(b)(6) Dep. Tr. at 87:19-21; see also Ex. 386 at ADVANCE-META-00003259 ("

."). Facebook's letter also ignores that it placed the Hive tables in cold storage only after identifying them as relevant to this case. See Ex. 386 at ADVANCE-META-00003259.

PLS' FURTHER RESPONSE RE: NAMED PLAINTIFF DATA ADDRESSING RECENTLY REVEALED PRESERVED DATA 2

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<sup>&</sup>lt;sup>1</sup> Plaintiffs reserve the right to respond once the Snapshots and DYI files are produced and to seek further corporate testimony from Facebook once the documents are produced.

<sup>&</sup>lt;sup>2</sup> This document was improperly withheld by Facebook as privileged, and then de-designated and produced on June 6, 2022, the same day as Plaintiffs' June 6 submission.

Facebook refers to the Special Master's ruling regarding certain tables in cold storage, but that ruling related to different content, and the parties and the Special Master have learned more now. FB-CA-MDL-03330509 (attached as Exhibit B) raises questions regarding Facebook's representations throughout the inquiry into Named Plaintiff data concerning the burden of restoring information in cold storage.

The document is an internal chat among a large number of Facebook employees, including custodians Eugene Zarakhovsky (now Zarashaw) and Shirine Sajjadi. Towards the beginning of the chat, an employee states: "Data Infra now says they can restore all the relevant partitions of in \*72 hours\* if we throw everything at it, which is very different from 150 days quoted earlier." Ex. B at FB-CA-MDL-03330511. In other words, committing resources to restoring a table from cold storage would enable Facebook to restore the table 50 times quicker than initially estimated. Approximately 11 hours later, the same engineer updates the effort: "[T]he positively surprising news from the army of data infra working on cold storage is that we're very close to having full restore on the Way faster than 150 days, or 72 hours:) still working to make sure that is indeed correct, but it's looking like it." Ex. B at FB-CA-MDL-03330519. The restoration from cold storage, initially estimated to take 150 days, had been cut to approximately a half day—300 times faster than the initial estimate.

Similar to the previous example, Facebook improperly withheld this document as privileged, then de-designated and produced it only two weeks before Plaintiffs' June 6 submission. This document reveals that Facebook can restore data from cold storage in fairly short order. It should be ordered to do so.

Dated: June 20, 2022 Respectfully submitted,

KELLER ROHRBACK L.L.P.

By: /s/ Derek W. Loeser Derek W. Loeser

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JAMS REF. No.: 1200058674

#### ATTESTATION PURSUANT TO CIVIL LOCAL RULE 5-1(h)(3)

I, Lesley E. Weaver, attest that concurrence in the filing of this document has been obtained from the other signatory. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 20th day of June, 2022, at Oakland, California.

/s/ Lesley E. Weaver Lesley E. Weaver

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