Nos. 2019-2198, -2201, -2202, -2204

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

REALTIME DATA LLC, dba IXO,

Plaintiff-Appellant,

v.

REDUXIO SYSTEMS, INC., ARYAKA NETWORKS, INC., PANZURA, INC., FORTINET, INC.,

Defendant-Appellees.

Appeals from the United States District Court for the District of Delaware, Case Nos. 1:17-cv-01635, 1:17-cv-01676, 1:18-cv-01200, 1:18-cv-02062, Judge Colm F. Connolly

---

CORRECTED RESPONDING BRIEF OF DEFENDANTS-APPELLEES

Guy Yonay
PEARL COHEN
ZEDEK LATZER BARATZ LLP
1500 Broadway, 12th Floor
New York, NY 10036
Tel: (646) 878-0808
Appellee Reduxio Systems, Inc.

Brian E. Mitchell
MITCHELL & COMPANY
4 Embarcadero Center, Suite 1400
San Francisco, CA 94111
Tel: (415) 766-3515
Appellee Panzura, Inc.

John M. Neukom
James Y. Pak
Michelle Kao
SKADDEN, ARPS,
SLATE, MEAGHER & FLOM LLP
525 University Avenue, Suite 1400
Palo Alto, California 94301
Tel: (650) 470-4500
Appellee Fortinet, Inc.

Joshua M. Masur
ZUBER LAWLER & DEL DUCA LLP
2000 Broadway Street, Suite 154
Redwood City, CA 94063
Tel: (650) 434-8538
Appellee Aryaka Networks, Inc.

CERTIFICATE OF INTEREST

Counsel for Defendant-Appellee Fortinet, Inc. certifies the following:

1. The full name of the party represented by us is:

   Fortinet, Inc.

2. The name of the real parties in interest represented by us:

   Fortinet, Inc.

3. All parent corporations and publicly held companies that own 10 percent or more of the stock of the party represented by us are as follows:

   Not applicable.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

   Jack Blumenfield, Brian Egan and Jeffrey Lyons of Morris, Nichols, Arsht & Tunnell LLP

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal are:

   - Realtime Data LLC. v. Reduxio Systems, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2198
   - Realtime Data LLC v. Aryaka Networks, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2201
   - Realtime Data LLC v. Panzura, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2202
   - Realtime Data LLC v. Fortinet, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2204

- Realtime Data LLC v. Sungard Availability Services, LP, United States District Court for the District of Massachusetts, Case No. 1:18-cv-12227-IT
- Realtime Data LLC v. Acronis, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-11279-IT
- Realtime Data LLC v. Carbonite, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-12499-IT
- Realtime Data LLC v. Array Networks, Inc., United States District Court for the District of Delaware, Case No. 1:17-cv-00800-CFC
- Realtime Data LLC v. Spectra Logic Corp., United States District Court for the District of Delaware, Case No. 1:17-cv-00925-CFC
- Realtime Data LLC v. CTERA Networks, LTD., United States District Court for the District of Delaware, Case No. 1:18-cv-02017-CFC
- Realtime Data LLC v. Quest Software, Inc., United States District Court for the District of Delaware, Case No. 1:18-cv-01964-CFC
- Realtime Data LLC v. Nimbus Data, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00279-CFC
- Realtime Data LLC v. Kaminario, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00350-CFC
- Realtime Data LLC v. OpenText, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00394-CFC
- Realtime Data LLC v. MongoDB, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00492-CFC
- Realtime Data LLC v. Veritas Techs. LLC, United States District Court for the Northern District of California, Case No. 3:18-cv-06029-SI
- Realtime Data LLC v. Fujitsu Am., Inc., United States District Court for the Northern District of California, Case No. 3:17-cv-02109-SK

DATED: March 20, 2020 By: /s/ John M. Neukom
John M. Neukom

CERTIFICATE OF INTEREST

Counsel for Defendant-Appellee Reduxio Systems, Inc. certifies the following:

1. The full name of the party represented by us is:

   Reduxio Systems, Inc.

2. The name of the real parties in interest represented by us:

   Reduxio Systems, Inc.

3. All parent corporations and publicly held companies that own 10 percent or more of the stock of the party represented by us are as follows:

   Reduxio Systems Ltd.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

   Kyle Auteri, Pearl Cohen Zedek Latzer Baratz LLP 1500 Broadway, 12th Floor, New York, NY 10036; Andrew C. Mayo, Ashby & Geddes, P.A., 500 Delaware Ave. 8th Floor, P.O. Box 1150, Wilmington, DE 19899

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal are:

   - Realtime Data LLC. v. Reduxio Systems, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2198
   - Realtime Data LLC v. Aryaka Networks, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2201
   - Realtime Data LLC v. Panzura, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2202
   - Realtime Data LLC v. Fortinet, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2204

- Realtime Data LLC v. Sungard Availability Services, LP, United States District Court for the District of Massachusetts, Case No. 1:18-cv-12227-IT
- Realtime Data LLC v. Acronis, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-11279-IT
- Realtime Data LLC v. Carbonite, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-12499-IT
- Realtime Data LLC v. Array Networks, Inc., United States District Court for the District of Delaware, Case No. 1:17-cv-00800-CFC
- Realtime Data LLC v. Spectra Logic Corp., United States District Court for the District of Delaware, Case No. 1:17-cv-00925-CFC
- Realtime Data LLC v. CTERA Networks, LTD., United States District Court for the District of Delaware, Case No. 1:18-cv-02017-CFC
- Realtime Data LLC v. Quest Software, Inc., United States District Court for the District of Delaware, Case No. 1:18-cv-01964-CFC
- Realtime Data LLC v. Nimbus Data, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00279-CFC
- Realtime Data LLC v. Kaminario, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00350-CFC
- Realtime Data LLC v. OpenText, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00394-CFC
- Realtime Data LLC v. MongoDB, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00492-CFC
- Realtime Data LLC v. Veritas Techs. LLC, United States District Court for the Northern District of California, Case No. 3:18-cv-06029-SI
- Realtime Data LLC v. Fujitsu Am., Inc., United States District Court for the Northern District of California, Case No. 3:17-cv-02109-SK

DATED: March 20, 2020 By: /s/ Guy Yonay
Guy Yonay

CERTIFICATE OF INTEREST

Counsel for Defendant-Appellee Aryaka Networks, Inc. certifies the following:

1. The full name of the party represented by us is:

   Aryaka Networks, Inc.

2. The name of the real parties in interest represented by us:

   Aryaka Networks, Inc.

3. All parent corporations and publicly held companies that own 10 percent or more of the stock of the party represented by us are as follows:

   Not applicable.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

   Morris James LLP / Kenneth L. Dorsney

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal are:

   - Realtime Data LLC. v. Reduxio Systems, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2198
   - Realtime Data LLC v. Aryaka Networks, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2201
   - Realtime Data LLC v. Panzura, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2202
   - Realtime Data LLC v. Fortinet, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2204
   - Realtime Data LLC v. Sungard Availability Services, LP, United States District Court for the District of Massachusetts, Case No. 1:18-cv-12227-IT

- Realtime Data LLC v. Acronis, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-11279-IT
- Realtime Data LLC v. Carbonite, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-12499-IT
- Realtime Data LLC v. Array Networks, Inc., United States District Court for the District of Delaware, Case No. 1:17-cv-00800-CFC
- Realtime Data LLC v. Spectra Logic Corp., United States District Court for the District of Delaware, Case No. 1:17-cv-00925-CFC
- Realtime Data LLC v. CTERA Networks, LTD., United States District Court for the District of Delaware, Case No. 1:18-cv-02017-CFC
- Realtime Data LLC v. Quest Software, Inc., United States District Court for the District of Delaware, Case No. 1:18-cv-01964-CFC
- Realtime Data LLC v. Nimbus Data, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00279-CFC
- Realtime Data LLC v. Kaminario, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00350-CFC
- Realtime Data LLC v. OpenText, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00394-CFC
- Realtime Data LLC v. MongoDB, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00492-CFC
- Realtime Data LLC v. Veritas Techs. LLC, United States District Court for the Northern District of California, Case No. 3:18-cv-06029-SI
- Realtime Data LLC v. Fujitsu Am., Inc., United States District Court for the Northern District of California, Case No. 3:17-cv-02109-SK

DATED: March 20, 2020 By: /s/ Joshua M. Masur
Joshua M. Masur

CERTIFICATE OF INTEREST

Counsel for Defendant-Appellee Panzura, Inc. certifies the following:

1. The full name of the party represented by us is:

   Panzura, Inc.

2. The name of the real parties in interest represented by us:

   Panzura, Inc.

3. All parent corporations and publicly held companies that own 10 percent or more of the stock of the party represented by us are as follows:

   Not applicable.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

   Brian Egan and Jeffrey Lyons of Morris, Nichols, Arsht & Tunnell LLP

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal are:

   - Realtime Data LLC. v. Reduxio Systems, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2198
   - Realtime Data LLC v. Aryaka Networks, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2201
   - Realtime Data LLC v. Panzura, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2202
   - Realtime Data LLC v. Fortinet, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2204

- Realtime Data LLC v. Sungard Availability Services, LP, United States District Court for the District of Massachusetts, Case No. 1:18-cv-12227-IT
- Realtime Data LLC v. Acronis, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-11279-IT
- Realtime Data LLC v. Carbonite, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-12499-IT
- Realtime Data LLC v. Array Networks, Inc., United States District Court for the District of Delaware, Case No. 1:17-cv-00800-CFC
- Realtime Data LLC v. Spectra Logic Corp., United States District Court for the District of Delaware, Case No. 1:17-cv-00925-CFC
- Realtime Data LLC v. CTERA Networks, LTD., United States District Court for the District of Delaware, Case No. 1:18-cv-02017-CFC
- Realtime Data LLC v. Quest Software, Inc., United States District Court for the District of Delaware, Case No. 1:18-cv-01964-CFC
- Realtime Data LLC v. Nimbus Data, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00279-CFC
- Realtime Data LLC v. Kaminario, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00350-CFC
- Realtime Data LLC v. OpenText, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00394-CFC
- Realtime Data LLC v. MongoDB, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00492-CFC
- Realtime Data LLC v. Veritas Techs. LLC, United States District Court for the Northern District of California, Case No. 3:18-cv-06029-SI
- Realtime Data LLC v. Fujitsu Am., Inc., United States District Court for the Northern District of California, Case No. 3:17-cv-02109-SK

DATED: March 20, 2020 By: /s/ Brian E. Mitchell
Brian E. Mitchell

TABLE OF CONTENTS

PAGE

CERTIFICATE OF INTEREST i

TABLE OF AUTHORITIES xi

STATEMENT OF RELATED CASES xiv

INTRODUCTION 1

STATEMENT OF ISSUES ON REVIEW 2

STATEMENT OF THE CASE 3

I. The Patents-In-Suit 3

A. The '728 Patent 5

B. The '203 Patent 7

C. The '908 Patent 9

D. The '530 Patent 11

E. The '751 Patent 12

II. The District Court's Patent Eligibility Determination 13

SUMMARY OF ARGUMENT 19

STANDARD OF REVIEW 23

ARGUMENT 24

I. The District Court Correctly Concluded That The Patents-In-Suit Are Directed To An Abstract Idea And Lack An Inventive Concept 24

A. The Claims Of The Patents-In-Suit Fail *Alice* Step One Because They Are Directed To An Abstract Idea 25

1. The Claims Invoke Generic Processes and Machinery to Achieve a Desired Result 27

2. The Addition of Elements Such as a State Machine Merely Provide a Generic Environment to Carry Out an Abstract Idea 32

3. The Mere Manipulation of Data, Without More, Is an Abstract Idea 33

4. Unlike *DDR Holdings* and *Visual Memory*, the Claims Do Not Specify How They Achieve the Results They Claim 35

5. Realtime's Assertion That the Claims Were Not Considered as a Whole Is Unavailing 38

B. The Claims Of The Patents-In-Suit Fail *Alice* Step Two Because They Lack An Inventive Concept 40

1. The Claims of the Patents-in-Suit Recite No Specific Technical Solution Sufficient to Supply an Inventive Concept 41

2. Contrary to Realtime's Assertion, The Patents Do Not Provide Unconventional Solutions to Known Problems In Data Compression 44

3. The Claims Were Considered As An Ordered Combination 46

4. The District Court Did Not Improperly Conflate Issues of Novelty and Obviousness With Its Analysis 48

C. The Prior Rulings That Realtime Cites Are Distinguishable 50

D. Realtime's Attempts To Distinguish The Cases Relied Upon By The District Court Fail 53

E. The District Court's Ruling Was Entirely Proper, Even Without A Subsequent Written Order 55

II. The District Court Was Within Its Discretion To Deny Realtime's Request For Leave To Amend 57

CONCLUSION 58

CERTIFICATE OF COMPLIANCE 60

CERTIFICATE OF SERVICE 61

TABLE OF AUTHORITIES

PAGE(S)

CASES

Aatrix Software, Inc. v. Green Shades Software, Inc.,
882 F.3d 1121 (Fed. Cir. 2018) 58

Affinity Labs of Texas, LLC v. Amazon.com, Inc.,
838 F.3d 1266 (Fed. Cir. 2016), *cert. denied*, 137 S. Ct. 1956 (2017) 27, 31

Alice Corp. v. CLS Bank International,
573 U.S. 208 (2014).....5, 20, 24, 27, 41

Bascom Global Internet Services, Inc. v. AT&T Mobility LLC,
827 F.3d 1341 (2016).....41, 47, 48

Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A., 776
F.3d 1343 (Fed. Cir. 2014) 19, 23, 33, 34

DDR Holdings, LLC v. Hotels.com, L.P.,
773 F.3d 1245 (Fed. Cir. 2014) 35, 36

Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.,
758 F.3d 1344 (Fed. Cir. 2014) 18, 54

Electric Power Group, LLC v. Alstom S.A.,
830 F.3d 1350 (Fed. Cir. 2016) .....*passim*

Enfish, LLC v. Microsoft Corp.,
822 F.3d 1327 (Fed. Cir. 2016) 43

FairWarning IP, LLC v. Iatric System [s], Inc.,
839 F.3d 1089 (Fed. Cir. 2016) 40, 41, 45

Fletcher-Harlee Corp. v. Pote Concrete Contractors, Inc.,
482 F.3d 247 (3rd Cir. 2007).....57

Intellectual Ventures I LLC v. Capital One Bank (USA),
792 F.3d 1363 (Fed. Cir. 2015) 30, 36, 55

Intellectual Ventures I LLC v. Capital One Financial Corporation,
850 F.3d 1332 (Fed. Cir. 2017) 34

Intellectual Ventures I LLC v. Symantec Corp.,
838 F.3d 1307 (Fed. Cir. 2016) 42

Jedi Technologies, Inc. v. Spark Networks, Inc.,
Civil Action No. 1:16-1055-GMS, 2017 WL 3315279 (D. Del. Aug. 3, 2017) 25

Lake v. Arnold,
232 F.3d 360 (3d Cir. 2000) 58

Maxon, LLC v. Funai Corp., Inc.,
726 F. App'x 797 (Fed. Cir. 2018) 46

Mayo Collaborative Services v. Prometheus Laboratories, Inc.,
566 U.S. 66 (2012).....24

McRo, Inc. v. Bandai Namco Games America Inc.,
837 F.3d 1299 (Fed Cir. 2016) 18, 53

Mortgage Grader, Inc. v. First Choice Loan Services Inc.,
811 F.3d 1314 (Fed. Cir. 2016) 4

Petrosky v. Nike, Inc.,
No. 91-1513, 1992 WL 78089 (Fed. Cir. Apr. 21, 1992).....56

Pridgen v. Law,
299 F. App'x 211 (3d Cir. 2008) 56

Ramsgate Court Townhome Ass'n v. West Chester Borough,
313 F.3d 157 (3d Cir. 2002) 23, 57

RecogniCorp, LLC v. Nintendo Co.,
855 F.3d 1322 (Fed. Cir. 2017) .....*passim*

Synopsys, Inc. v. Mentor Graphics Corp.,
839 F.3d 1138 (Fed. Cir. 2016) 48

In re TLI Communications LLC Patent Litigation,
823 F.3d 607 (Fed. Cir. 2016) .....*passim*

Two-Way Media Ltd. v. Comcast Cable Communications, LLC,
874 F.3d 1329 (Fed. Cir. 2017), *cert. denied*, 139 S. Ct. 378 (2018) 45

VideoShare, LLC v. Google, Inc.,
Civil Action No. 13-cv-990 (GMS) 2016 WL 4137524 (D. Del. Aug. 2, 2016), *aff'd*, 695 F. App'x 577 (2017) 47, 48

Visual Memory LLC v. Nvidia Corp.,
867 F.3d 1253 (Fed. Cir. 2017) 36, 37, 43

STATUTES

35 U.S.C. § 101 24

RULES

District of Delaware Local Rule 15.1(a).....57

STATEMENT OF RELATED CASES

No other appeal in or from the same civil action or proceeding in the lower court or body were previously before this or any appellate court.

The cases known to counsel for Defendants-Appellees to be pending in this or any other court that will directly affect or be directly affected by this Court's decision in this pending appeal are:

- Realtime Data LLC. v. Reduxio Systems, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2198
- Realtime Data LLC v. Aryaka Networks, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2201
- Realtime Data LLC v. Panzura, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2202
- Realtime Data LLC v. Fortinet, Inc., United States Court of Appeals for the Federal Circuit, Appeal No. 19-2204
- Realtime Data LLC v. Sungard Availability Services, LP, United States District Court for the District of Massachusetts, Case No. 1:18-cv-12227-IT
- Realtime Data LLC v. Acronis, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-11279-IT
- Realtime Data LLC v. Carbonite, Inc., United States District Court for the District of Massachusetts, Case No. 1:17-cv-12499-IT
- Realtime Data LLC v. Array Networks, Inc., United States District Court for the District of Delaware, Case No. 1:17-cv-00800-CFC
- Realtime Data LLC v. Spectra Logic Corp., United States District Court for the District of Delaware, Case No. 1:17-cv-00925-CFC
- Realtime Data LLC v. CTERA Networks, LTD., United States District Court for the District of Delaware, Case No. 1:18-cv-02017-CFC

- Realtime Data LLC v. Quest Software, Inc., United States District Court for the District of Delaware, Case No. 1:18-cv-01964-CFC
- Realtime Data LLC v. Nimbus Data, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00279-CFC
- Realtime Data LLC v. Kaminario, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00350-CFC
- Realtime Data LLC v. OpenText, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00394-CFC
- Realtime Data LLC v. MongoDB, Inc., United States District Court for the District of Delaware, Case No. 1:19-cv-00492-CFC
- Realtime Data LLC v. Veritas Techs. LLC, United States District Court for the Northern District of California, Case No. 3:18-cv-06029-SI
- Realtime Data LLC v. Fujitsu Am., Inc., United States District Court for the Northern District of California, Case No. 3:17-cv-02109-SK

INTRODUCTION

The District Court concluded correctly that Realtime's asserted patents claim abstract ideas—the analysis, compression, decompression, and storage of data—and fail to pass the patent eligibility standard established by the Supreme Court in *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014) ("*Alice*"). The disputed patents claim the general concepts of compressing or decompressing data using more than one method, compressing and storing data "faster" than the time it would take to store the same data without compression, or the combination of both. In doing so, the patents do *not* claim an improvement in the relevant technology or any particular methods of compressing, decompressing, or storing data. Instead, the patents refer to all manner of well-known compression or decompression techniques using generic, off-the-shelf processors and encoders. As such, the District Court correctly found that the patents were invalid because they represent an abstract process that couples well-known encoding or decoding techniques with a generic computer performing generic functions to achieve a desired result.

In bringing this appeal, Realtime argues that the District Court erred because its patents are directed to improved, particularized methods of digital data compression and provide unconventional solutions to known problems. But Realtime fails to point to any claim limitation that illustrates *how* they purport to achieve the results they recite. Nor can Realtime elaborate on its supposedly

unconventional solutions, especially because the tangible elements of its claims are generic computer elements utilized in a generic way.

Finally, Realtime's request for leave to amend was rightly denied by the District Court. Among other reasons why: Realtime never filed a proposed amended pleading, let alone alleged any additional facts, that could save its deficient patents and claims of infringement.

STATEMENT OF ISSUES ON REVIEW

This appeal presents the following issues for review by this Court:

1. Did the District Court conclude correctly, having considered the record and having heard arguments of counsel, that U.S. Patent Nos. 9,054,728 ("the '728 Patent"); 8,717,203 ("the '203 Patent"); 9,116,908 ("the '908 Patent"); 7,415,530 ("the '530 Patent"); and 9,667,751 ("the '751 Patent") (collectively, "Patents-in-Suit") are directed to an abstract idea under 35 U.S.C. § 101?

2. Did the District Court conclude correctly, having considered the record and having heard arguments of counsel, that the claims of the Patents-in-Suit do not provide an inventive concept capable of rendering the claims patent-eligible under 35 U.S.C. § 101?

3. Was the District Court within its discretion, having considered the record and having heard arguments of counsel, to deny Realtime's request for leave to amend?

STATEMENT OF THE CASE

I. The Patents-In-Suit

There are five patents at issue in this appeal: the '728, '203, '908, '530 and '751 Patents. The Patents-in-Suit describe data manipulation—analysis, compression, decompression, and storage of data. But in doing so, the Patents-in-Suit nowhere purport to limit themselves to any particular ways (let alone to claim any inventive way) to analyze data; nor any particular ways to compress, decompress, or store any data. The Patents-in-Suit instead purport to claim data manipulation by using, exclusively, methods to analyze, compress, decompress, and store that are admittedly known-in-the-art.

The '728 and '203 Patents describe the concept of compressing or decompressing data using a compression or decompression method that is dependent on the underlying data type, although neither patent purports to claim any compression or decompression method. The '908 and '530 Patents describe the concept of using two or more compression techniques to compress and store data "faster," although they do not purport to claim any compression or storage techniques, and furthermore do not explain how the "faster" limitation is achieved except through the use of multiple (unspecified, not claimed) compression techniques. The '751 Patent combines the concepts of the '728 and '908 Patents, describing the concepts of (i) compressing data using a compression method that is

dependent on the underlying data type, and (ii) thereafter using two or more compression techniques to compress and store data more quickly. All of the patents "may be implemented in various forms of hardware, software, firmware, or a combination thereof." Appx89 at 4:48-50; Appx167 at 6:25-26; Appx246 at 6:31-32; Appx309 at 4:48-50; Appx371 at 8:4-6.

For *Alice* purposes, there is a representative claim for each of the Patents-in-Suit. Specifically, claim 1 of the '728 Patent, claim 14 of the '203 Patent, claim 1 of the '908 Patent, claim 1 of the '530 Patent, and claim 25 of the '751 Patent are representative claims. On appeal, Realtime argues that there are other claims in the Patents-in-Suit. *See* Realtime Br. 2, 29, 47. But Realtime never argues, much less shows, that these limitations are at all meaningful to the analysis under § 101. *See also*, Appx15 at 7:20-22; Appx17 at 9:3-6 (Realtime counsel remarked that "obviously, there's a lot of commonality in terms of the patents" but later backtracked and stated there were differences, though those differences were never identified in any detail). Realtime thus fails to "present[] any meaningful argument for the distinctive significance of any claim limitations other than those included in [the representative claims]." *Elec. Power Grp. LLC v. Alstom S.A.*, 830 F.3d 1350, 1352 (Fed. Cir. 2016) (treating one claim as representative for determining § 101 validity); *see also Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324 n.6 (Fed. Cir. 2016) ("Although there was neither an agreement

by the parties nor a finding by the district court that any one of the asserted claims is representative for purposes of the § 101 analysis, there is also no contention that the claims differ in any manner that is material to the patent-eligibility inquiry. We have no need to address the four asserted claims individually."). Thus, claim 1 of the '728 Patent, claim 14 of the '203 Patent, claim 1 of the '908 Patent, claim 1 of the '530 Patent, and claim 25 of the '751 Patent are representative claims, and the court need not address all claims of all of the Patents-in-Suit individually. *See generally*, *Alice*, 573 U.S. at 224-27 (finding 208 claims to be patent-ineligible based on analysis of one representative claim). Regardless, the District Court, in determining that the Patents-in-Suit were patent ineligible, considered all of the briefing of the parties associated with the motion to dismiss, which contained arguments on the validity of the other claims.

A. The '728 Patent

The '728 Patent focuses on "determining the optimal compression technique for a given set of input data and intended application." Appx244 at 2:66-67. Claim 1 of the '728 Patent is representative of the patent and reads as follows:

1. A system for compressing data comprising;

a processor;

one or more content dependent data compression encoders; and

a single data compression encoder;

> wherein the processor is configured:
>
> to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block;
>
> to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and
>
> to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified.

The specification states that incoming data is analyzed to identify "parameters that may be indicative of either the data type/content of a given data block or the appropriate data compression algorithm or algorithms" to apply. Appx251 at 16:22-28. If the data type is recognized, the data is routed to a "content dependent encoder module." Appx251 at 16:31-33. If not, the data goes to a "content independent encoder module." Appx251 at 16:33-34.

Claim 1 fails to specify the type of compression that is to be performed. The structure of the encoders for compression is not defined in the claim, and the specification merely treats the encoders as generic components. *See, e.g.*, Appx211 (depicting "Encoder E1 . . . En" boxes within encoder module 30); Appx246 at 6:30-32 ("[T]he present invention may be implemented in various forms of hardware, software, firmware, or a combination thereof."). That is

because the specification makes clear that *any* type of compression can be used: "any number . . . of . . . encoding techniques currently well known within the art . . . to provide a broad coverage of existing and future data types." Appx247 at 7:11-17; Appx247 at 7:21-22.

Ultimately, the '728 Patent claims a generic system that may be implemented on "a general purpose computer or any machine or device having any suitable and preferred microprocessor architecture." Appx246 at 6:35-37.

B. The '203 Patent

The '203 Patent is the decompression counterpart to the '728 Patent, and similarly uses a plurality of decompression techniques "to reduce the data decoding time." Appx172 at 15:8-10. Claim 14 of the '203 Patent is representative of the patent and reads as follows:

> 14. A system for decompressing, one or more compressed data blocks included in one or more data packets using a data decompression engine, the one or more data packets being transmitted in sequence from a source that is internal or external to the data decompression engine, wherein a data packet from among the one or more data packets comprises a header containing control information followed by one or more compressed data blocks of the data packet the system comprising:
>
> > a data decompression processor configured to analyze the data packet to identify one or more recognizable data tokens associated with the data packet, the one or more recognizable data identifying a selected encoder used to compress one or more data blocks to provide the one or more compressed data blocks, the encoder being selected based on content of the one or more data blocks on which a compression algorithm was applied;

> one or more decompression decoders configured to decompress a compressed data block from among the one or more compressed data blocks associated with the data packet based on the one or more recognizable data tokens; wherein:
>
> > the one or more decompression decoders are further configured to decompress the compressed data block utilizing content dependent data decompression to provide a first decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content dependent data compression; and
> >
> > the one or more decompression decoders are further configured to decompress the compressed data block utilizing a content independent data decompression to provide a second decompressed data block when the one or more recognizable data tokens indicate that the data block was encoded utilizing content independent data compression; and
> >
> > an output interface, coupled to the data decompression engine, configured to output a decompressed data packet including the first or the second decompressed data block.

Thus, claim 14 requires that data be analyzed to identify, based on unspecified information in the data, a decompression technique to use. Once the data is decompressed, the system outputs the data.

Like claim 1 of the '728 Patent, this claim also fails to specify the type of decompression that is to be performed. The specification does not limit what the "data decompression engine" encompasses or includes. Instead, the specification notes that "[t]he decoders D1 . . . Dn may include those lossless encoding techniques currently well known within the art." Appx171-172 at 14:66-15:3. It also states that "pars[ing], lexically, syntactically, or otherwise analyz[ing] the

input data block" can be performed "using methods known by those skilled in the art to extract the data compression type descriptor associated with the data block." Appx171 at 14:52-57.

Here too, the '203 Patent claims a generic system that may be implemented on "a general purpose computer or any machine or device having any suitable and preferred microprocessor architecture." Appx167 at 6:29-31.

C. The '908 Patent

The '908 Patent discloses using "lossless data compression and decompression." Appx309 at 4:42-44. Claim 1 of the '908 Patent is representative of the patent and reads as follows:

> 1. A system comprising:
>
> a memory device; and
>
> a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block;
>
> wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form.

Thus, claim 1 of the '908 Patent is directed to a system that includes memory and a data accelerator that (i) compresses two data blocks using different

compression techniques; (ii) stores the blocks; and (iii) does this compression and storage "faster" than it could store the uncompressed blocks.

Claim 1 of the '908 Patent also does not disclose any specific compression techniques. More generally, the patent specification simply discloses that "the data compression ratio of the data storage accelerator 10 may be adjusted by applying a different type of encoding process such as employing a single encoder, multiple parallel or sequential encoders, or any combination thereof." Appx312 at 10:6-10. Ultimately, "[t]he encoder set . . . may include any number . . . of those lossless encoding techniques currently well known within the art." Appx313 at 11:66-12:3.

Claim 1 also does not contain any additional detail as to how the claimed "faster" results are achieved. The specification of the '908 Patent fails to provide meaningful detail as well. Figure 1 depicts the "accelerated data storage and retrieval" system as a "data storage accelerator" that receives and processes data blocks from an input data stream. Appx309 at 3:62-64; Appx310 at 5:52-53. There is no additional detail as to how that accelerator obtains "faster" results. The specification simply acknowledges that "[d]ata compression is widely used to reduce the amount of data required to process, transmit, or store a given quantity of information" and focuses on "accelerating" these known compression methods. Appx308 at 1:51-53.

D. The ’530 Patent

The ’530 Patent is similar to the ’908 Patent, which is in the same family and shares a common specification. Like the ’908 Patent, the ’530 Patent discloses using “lossless data compression and decompression.” Appx89 at 4:42-44. Claim 1 of the ’530 Patent is representative of the patent and analogous to claim 1 of the ’908 Patent, with one addition: it recites storing a compression technique “descriptor” and using that descriptor to decompress the data.

> 1. A system comprising:
>
> a memory device; and
>
> a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.

As with the ’908 Patent, the identical specification in the ’530 Patent fails to disclose any specific compression techniques or any additional detail as to how the claimed “faster” results are achieved.

E. The ’751 Patent

The ’751 Patent combines the concepts of the ’728 and ’908 Patents. Claim 25 of the ’751 Patent is representative of the patent and reads as follows:

> 25. A system for compressing data comprising:
>
> a data server implemented on one or more processors and one or more memory systems and configured to:
>
> analyze content of a data block to identify a parameter, attribute, or value of the data block that excludes analysis based solely on reading a descriptor;
>
> select an encoder associated with the identified parameter, attribute, or value;
>
> compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine; and
>
> store the compressed data block;
>
> wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form.

Claim 25 thus recites the steps of (i) identifying a “parameter, attribute, or value” of data; (ii) selecting an encoder based on that parameter; (iii) compressing the data at a certain rate; (iv) storing the data; and (v) doing this compression/transmission in less time than it could have for uncompressed data.

Notably, the claim merely defines what is to be achieved: “compressing the data block and the storing the compressed data block” in less time than “storing the data block in uncompressed form.” But it does not specify how that result is to be

achieved. The specification notes unhelpfully that "accelerated" transmission is "a process of receiving a data stream for transmission over a communication channel, compressing the broadcast data . . . at a compression rate that increases the effective bandwidth of the communication channel, and transmitting the compressed broadcast data over the communication channel." Appx370 at 6:28-36.

The '751 Patent also claims the use of a state machine during compression. But the state machine is described as "either part of the hardware, microinstruction code or application programs that are executed via the operating system, or any combination thereof." Appx371 at 8:15-17. More importantly, the state machine is not a meaningful limitation to the '751 Patent. Instead, it "comprises a set of compression tables that comprise information for encoding the next character" and is to be implemented using "[g]eneral purpose computers, servers, workstations, personal digital assistants, special purpose microprocessors, dedicated hardware, or and [sic] combination thereof." Appx372 at 9:12-13; Appx371 at 8:23-25.

II. The District Court's Patent Eligibility Determination

Realtime asserted a combination of the Patents-in-Suit against each of the Defendant-Appellees Fortinet, Inc. ("Fortinet"); Reduxio Systems, Inc. ("Reduxio"); Panzura, Inc. ("Panzura"); and Aryaka Networks, Inc. ("Aryaka").

Realtime filed its patent infringement action against Fortinet on November 10, 2017. On February 20, 2018, Fortinet filed a motion to dismiss for

failure to state a claim on the grounds that the claims of the Patents-in-Suit were directed to ineligible subject matter under 35 U.S.C. § 101 ("§ 101" or "Section 101"). More specifically, Fortinet joined and incorporated by reference the arguments of the motions to dismiss of defendants in other actions[1] that asserted that the patents were directed to an abstract idea and that the claims lacked an inventive concept capable of transforming the abstract idea into patent-eligible subject matter.

Realtime filed its action against Reduxio on November 20, 2017. On March 27, 2018, Reduxio filed a motion to dismiss on the grounds that the claims of the Patents-in-Suit were directed to ineligible subject matter. In its motion, Reduxio argued that the patents were invalid because (i) they were directed to abstract

[1] Realtime has filed at least 86 unique cases against 112 unique defendants asserting some combination of the Patents-in-Suit. These cases span numerous jurisdictions. Realtime has filed 3 cases in the Central District of California. *See, e.g.*, *Realtime Data LLC v. Nexenta Systems, Inc.*, Case No. 2:17-cv-07690-SJO-JC (C.D. Cal. Oct. 20, 2017). It has filed 10 cases in the Northern District of California. *See, e.g.*, *RealTime Data LLC v. Fujitsu America, Inc.*, Case No. 3:17-cv-02109-SK (N.D. Cal. Apr. 14, 2017). It has filed 2 cases in the District of Colorado. *See, e.g.*, *Realtime Data LLC d/b/a IXO v. Facebook, Inc.*, Case No. 1:18-cv-01373-RBJ (D. Colo. June 5, 2018). It has filed 36 cases in the District of Delaware. *See, e.g.*, *Realtime Data LLC d/b/a IXO v. CTERA Networks, Ltd.*, Case No. 1:18-cv-02017-CFC (D. Del. Dec. 19, 2018). It has filed 4 cases in the District of Massachusetts. *See, e.g.*, *Realtime Data LLC d/b/a IXO v. Sungard Availability Servs., LP*, Case No. 1:18-cv-12227-IT (D. Mass. Oct. 25, 2018). It has filed 31 cases in the Eastern District of Texas. *See, e.g.*, *Realtime Data d/b/a IXO v. Int'l Bus. Machines Corp.*, Case No. 6:18-cv-00188-JRG (E.D. Tex. Apr. 30, 2018).

subject matter; and (ii) the remaining elements of the claims were insufficient to transform the nature of the claims into a patent-eligible application.

Realtime filed its action against Panzura on August 7, 2018. On May 6, 2019, Panzura filed a motion to dismiss on the grounds that the claims of the Patents-in-Suit were directed to ineligible subject matter. More specifically, Panzura joined and incorporated by reference arguments of the motions to dismiss of defendants in other actions that asserted that the patents were directed to an abstract idea and that the claims lacked an inventive concept capable of transforming the abstract idea into patent-eligible subject matter.

Finally, Realtime filed its action against Aryaka on December 28, 2018. On April 8, 2019, Aryaka filed its motion to dismiss, joining and incorporating by reference, in relevant part, arguments of the motions to dismiss of defendants in other actions that asserted that the patents were directed to an abstract idea and that the claims lacked an inventive concept capable of transforming the abstract idea into patent-eligible subject matter. After Realtime responded to Aryaka's motion on April 22, 2019, by amending its complaint, Aryaka moved to dismiss that amended complaint on May 6, 2019, again incorporating other defendants' motions to dismiss on the grounds before the Court on appeal.

A consolidated hearing on the motions to dismiss was held on June 19, 2019 in the United States District Court for the District of Delaware. Although Realtime

tries to make much over the fact that no written opinion was issued, a review of the transcript for the hearing shows how unavailing that complaint is. The District Court rendered a detailed, oral ruling—with specificity and "pin" cites—and did so after a lengthy and engaged hearing. As the District Court explained:

> [The Court:] I do want to emphasize that although I'm not issuing a written opinion, I have followed a thorough process before making the decision I'm about to state. There was full briefing. The parties were permitted and did submit filings indicating the cases they thought were most analogous to this case. There has been oral argument and I've thought about what was said this morning. I've also carefully considered the briefs.

Appx52 at 44:17-24. In doing so, the District Court considered the three complete sets of briefing and the numerous authorities relied upon by the parties regarding patent eligibility under § 101. *See* Appx18 at 10:23-25.

Further, throughout the hearing, the District Court repeatedly gave Realtime the opportunity to point out an inventive concept—*i.e.*, a supposed technical solution that its patents claim. *See, e.g.* Appx30 at 22:18-19 ("[The Court:] What's a technical solution that this analysis teaches?"); *see also* Appx29 at 21:14-15; Appx42 at 34:17-18; Appx43 at 35:6-10; Appx43 at 35:20-22; Appx44 at 36:16-18; Appx46 at 38:20-24; Appx47 at 39:14-15. Realtime was unable to do so, and the District Court noted the following:

> [The Court:] I felt like Realtime's counsel was afforded every opportunity this morning to articulate something non-abstract, to articulate some technical solution in the claims of the patent this morning and I just didn't hear it.

Appx58 at 50:13-16.

Ultimately, the District Court concluded that all of the claims of the Patents-in-Suit are patent ineligible under § 101. *See* Appx57 at 49:1-6.

Applying *Alice*'s two-part test, the District Court determined that at step one, the claims of the Patents-in-Suit are directed to an abstract idea. Specifically, the District Court found that the '728 Patent is directed to the abstract idea of "choosing a compression method based on the data type," (Appx56 at 48:3-5); the '203 Patent is directed to the abstract idea of "choosing a decompression method using a data type," (Appx56 at 48:6-8); the '908 Patent is directed to the abstract idea of "using two or more compression techniques to compress and store data faster," (Appx56 at 48:9-11); the '530 Patent is directed to the abstract idea of "using two or more compression techniques to compress and store data faster and using a descriptor," (Appx56 at 48:12-14); and the '751 Patent is directed to the abstract idea of "choosing a compression method based on data type and using two or more compression techniques to compress and store data faster" (Appx56 at 48:16-18).

According to the District Court, the claims are directed to abstract ideas because "the claims lack a specific means or method that improves the relevant technology and instead merely invoke generic processes and machinery to achieve a desired result, that being the more efficient storage and transmission of digital

data." Appx53 at 45:12-20 (citing *McRo, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1314 (Fed Cir. 2016)). Additionally, the District Court reasoned that "[t]he provision of concrete elements in the patent, like a state machine, merely provide a generic environment in which to carry out an abstract idea and they therefore do not render the claims not abstract." Appx53-54 at 45:25-46:6 (citing *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016)). The District Court further held that "processes that start with data and add in an [algorithm] and end with a new form of data are directed to an abstract idea. That's what we have here." Appx54 at 46:7-13 (citing *Digitech Image Techs., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014) and *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322 (Fed. Cir. 2017)).

Under the second step of *Alice*, the District Court found that the claim limitations of the Patents-in-Suit—both individually and as an ordered combination—lack any inventive concept. The District Court found that:

> [The Court:] [N]one of the patents, getting to the Step 2 inquiry, provide an inventive concept. None of them point to a technical solution to compress or transmit data more efficiently. At bottom the[] Patents claim a desired result and they do not present or recite a technical solution to achieve that result, and therefore they're not patent eligible.

Appx56 at 48:19-25.

Finally, the District Court denied Realtime's request for leave to amend its pleadings, noting that "[Realtime has] been given more than a fair opportunity" to

be heard and "[a]s a practical matter [the case] should go to the Federal Circuit." Appx61 at 53:14-17.

SUMMARY OF ARGUMENT

The District Court properly recognized that the Patents-in-Suit fail both steps of the *Alice* analysis. At *Alice* step one, analyzing the claims as a whole, the District Court correctly concluded that the Patents-in-Suit are directed to the abstract ideas of manipulating data via analysis, compression, decompression, and storage—the kind of generalized concepts that this Court has previously found to be patent ineligible under § 101. *See Elec. Power Grp.*, 830 F.3d at 1353-54 (Fed. Cir. 2016) (noting that collecting, processing, or analyzing information, without more, is directed to an abstract idea); *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (noting that collecting, recognizing, and storing information is directed to an abstract idea).

Moreover, the claims of the Patents-in-Suit are directed to an abstract idea because they invoke generic processes and machinery to achieve a desired result, not a process for achieving that result. The Patents-in-Suit do not purport to claim how the data is analyzed, stored, compressed, or transmitted; and the specifications of the patents do nothing to help confine the abstract language of the claims. In fact, for example, the encoders are described so broadly that they are essentially generic components that can be implemented with any combination of "hardware,

software, [or] firmware" and perform any "well known" type of compression. *See, e.g.*, Appx246 at 6:30-32; Appx247 at 7:13-17. Ultimately, nothing in the claims provides the necessary specific solution to rise to the level of "improv[ing] the functioning of the computer itself." *Alice*, 573 U.S. at 225. Even the addition of elements such as a state machine merely provide a generic environment to carry out an abstract idea.

The District Court also properly found that processes that start with data, add an algorithm, and end with a new form of data are directed to an abstract idea. *See RecogniCorp*, 855 F.3d at 1327 ("A process that started with data, added an algorithm, and ended with a new form of data was directed to an abstract idea." (citation omitted)). The claims of the Patents-in-Suit do not do more, and in fact, merely encapsulate methods for manipulating data that humans have always performed in the past.

Realtime's assertion that the claims were not considered as a whole or as an ordered combination of elements is also unavailing. Realtime Br. 47, 50. Realtime cannot cherry-pick the District Court's clarifying background questions at the hearing without providing the necessary context around those questions that clearly demonstrate that the District Court properly considered the claims. *See, e.g.*, Appx33 at 25:13-25 (noting to Realtime: "I will give you your chance, but I've got to work through it slowly . . . I've got to understand it"). Moreover, Realtime

raised this very argument at the hearing before the District Court. In response, the District Court confirmed that the claims were to be analyzed as a whole and as a combination of elements. *See* Appx42 at 34:2-6 (District Court acknowledges that under the Federal Circuit's analysis "we look at the claim as a whole and the combination of elements in the claim as a whole"). There is therefore no question that the District Court explicitly "followed a thorough process before making [its] decision." Appx52 at 44:17-19.

At *Alice* step two, the District Court also properly concluded that the claims of the Patents-in-Suit fail to provide an inventive concept. As an initial matter, Realtime's argument that the District Court (i) improperly conflated issues of novelty and obviousness with its analysis of whether the claims provide an inventive concept; and (ii) relied on an improper factual determination to do so, is unfounded. Realtime Br. 47-50. The District Court relied on the correct test in determining that the claims at issue provide no inventive concept under step two of the *Alice* inquiry. *See, e.g.*, Appx56 at 48:19-25.

Indeed, the only tangible elements in the claims of the Patents-in-Suit are generic computer elements utilized in a generic, conventional way. The specifications of the Patents-in-Suit even recognize that the patents could be utilized by general purpose computers. Further, the ordering of the elements in the Patents-in-Suit is basic—the Patents-in-Suit disclose only conventional

components in conventional arrangements. Thus, the District Court properly concluded that the claim limitations lack an inventive concept even when considered as an ordered combination.

Realtime's reliance on *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), and *Visual Memory LLC v. Nvidia Corp.*, 867 F.3d 1253 (Fed. Cir. 2017), is misplaced. Realtime Br. 41, 44-45. In both *DDR Holdings* and *Visual Memory*, the claims of the asserted patents had specified *how* they achieved the results they claimed. The claims of the Patents-in-Suit here do not. Additionally, Realtime's reliance on the prior § 101 rulings in *Realtime Data LLC v. Carbonite, Inc.*, Case No. 6:17-cv-121, D.I. 70 (E.D. Tex. Sep. 20, 2017) ("*Carbonite*") and *Realtime Data LLC v. Actian Corp.*, Case No. 6:15-cv-463, D.I. 184 (E.D. Tex. Nov. 30, 2015) ("*Actian*") are unavailing for numerous reasons. Those decisions were based on different motion papers, did not consider or involve all of the Patents-in-Suit here, and of course in any event are non-binding on this Court as they were never affirmed on appeal. Realtime Br. 45-46, 56. In any event, both of those prior rulings were part of the record considered by the District Court in its finding that the Patents-in-Suit are ineligible.

Moreover, Realtime's attempts to distinguish the cases cited by the District Court fail. Realtime makes conclusory assertions that the cases are inapposite because the claims of the patents in those cases were not directed to an

improvement in computer functionality, while the claims of the Patents-in-Suit here purportedly are. Realtime Br. 57-59. But these assertions fail because, *inter alia*, the claims of the Patents-in-Suit are not directed to an improvement in computer functionality at all.

Finally, the District Court acted within its discretion to deny Realtime's request for leave to amend. The Third Circuit has found that district courts act within the bounds of their discretion when they reject requests for leave to amend where the plaintiff fails to "provide the district court with a proposed amended complaint." *Ramsgate Court Townhome Ass'n v. West Chester Borough*, 313 F.3d 157, 161 (3d Cir. 2002). Here, Realtime never submitted a proposed amended complaint or even identified what factual allegations it would add. Thus, the District Court's denial of Realtime's request for leave to amend was not an abuse of discretion.

STANDARD OF REVIEW

Applying Third Circuit law—the law of the regional circuit in this case—this Court reviews *de novo* the District Court's Rule 12(b)(6) determination. *See Content Extraction*, 776 F.3d at 1346. Similarly, this Court reviews *de novo* the District Court's determination of patent eligibility under § 101. *Id.* A denial of leave to amend is reviewed for abuse of discretion. *Ramsgate*, 313 F.3d at 161.

ARGUMENT

I. The District Court Correctly Concluded That The Patents-In-Suit Are Directed To An Abstract Idea And Lack An Inventive Concept

Section 101 defines patent-eligible subject matter as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. However, "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (citation omitted). These categories of subject matter have been excluded from patent-eligibility because they represent "the basic tools of scientific and technological work." *Id.* at 71 (citation omitted).

In *Alice*, the Supreme Court set out a two-step test for "distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." 573 U.S. at 217 (citation omitted). First, the court asks whether the claims are directed to a patent-ineligible concept, such as an abstract idea. *Id.* (citation omitted). Second, the court must decide whether the claims add an "inventive concept"—"an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Id.* at 217-18 (final alteration in original) (citation omitted). The District Court properly recognized that the Patents-in-Suit fail both steps of the *Alice* analysis.

A. The Claims Of The Patents-In-Suit Fail *Alice* Step One Because They Are Directed To An Abstract Idea

"A bedrock principle under *Alice* step one involves distilling claims to their basic concepts to determine whether they are directed to abstract ideas." *Jedi Techs., Inc. v. Spark Networks, Inc.*, No. 1:16-1055-GMS, 2017 WL 3315279, at *8 (D. Del. Aug. 3, 2017); *see also Elec. Power Grp.*, 830 F.3d at 1353 ("[W]e have described the first-stage inquiry as looking at the 'focus' of the claims, [and] their 'character as a whole'. . . ."). Thus, in evaluating a claim under step one, courts examine the claim as a whole to determine if its "character" or "focus" is an abstract idea. *Elec. Power Grp.*, 830 F.3d at 1353.

Here, the Patents-in-Suit describe data manipulation—analysis, compression, decompression, and storage. The '728 and '203 Patents more specifically claim the compressing or decompressing of data using a compression method that is dependent on the underlying data type. The '908 and '530 Patents claim using two or more compression techniques to compress and store data "faster." The '751 Patent combines the elements of the '728 Patent and the '908 Patent, and claims (i) the compressing of data using a compression method that is dependent on the underlying data type, and (ii) using two or more compression techniques to compress and store data more quickly.

The claims of the Patents-in-Suit are similar to the claims in *RecogniCorp*. There, this Court found that claims covering encoding and decoding technology

are directed to an abstract idea. *See RecogniCorp*, 855 F.3d at 1326. More specifically, this Court held that claims that took displayed images, assigned image codes to the images through an interface using a mathematical formula, and then reproduced the images based on the codes "reflect[ed] standard encoding and decoding, an abstract concept long utilized to transmit information." *Id.* (citing Morse code, ordering food via a numbering system, and Paul Revere's "one if by land, two if by sea" signaling system as examples of the abstract idea of encoding and decoding).

As such, the District Court properly concluded that the claims of the Patents-in-Suit are directed to abstract ideas. Specifically, the District Court found that the '728 Patent is directed to "choosing a compression method based on the data type," (Appx56 at 48:3-5); the '203 Patent is directed to "choosing a decompression method using a data type," (Appx56 at 48:6-8); the '908 Patent is directed to "using two or more compression techniques to compress and store data faster," (Appx56 at 48:9-11); the '530 Patent is directed to "using two or more compression techniques to compress and store data faster and using a descriptor," (Appx56 at 48:12-15); and the '751 Patent is directed to "using two or more compression techniques to compress and store data faster," (Appx56 at 48:16-18).

1. The Claims Invoke Generic Processes and Machinery to Achieve a Desired Result

The District Court, in concluding that the Patents-in-Suit were directed to an abstract idea, properly found that the claims merely invoke generic processes and machinery to achieve a desired result:

> [The Court:] I find that the claims lack a specific means or method that improves the relevant technology and instead merely invoke generic processes and machinery to achieve a desired result, that being the more efficient storage and transmission of digital data.

Appx53 at 45:12-16.

The District Court's finding is correct. Claims of a patent are directed to an abstract idea where "the claims do no more than describe a desired function or outcome, without providing any limiting detail that confines the claim to a particular solution to an identified problem." *Affinity Labs of Texas, LLC v. Amazon.com, Inc.*, 838 F.3d 1266, 1269 (Fed. Cir. 2016), *cert. denied*, 137 S. Ct. 1956 (2017). This Court has held that "[t]he essentially result-focused, functional character of claim language has been a frequent feature of claims held ineligible under § 101." *Affinity Labs*, 838 F.3d at 1356 (citation omitted).

Here, nothing in the claims of the Patents-in-Suit provides a specific solution that "improve[s] the functioning of the computer itself." *Alice*, 573 U.S. at 225. The only tangible elements in the claims are generic computer elements: a processor ('728 Patent, claim 1), (Appx256); memory ('908 and '530 Patents,

claim 1), (Appx316; Appx96); and encoders (all), (Appx96; Appx178; Appx256; Appx316; Appx380). Moreover, the claims do not recite *how* data is analyzed, stored, compressed, or transmitted. Instead, they simply state the *purpose* of such information manipulation.

For example, the claims state the goal of "identify[ing] one or more parameters or attributes of the data," but do not provide the means for achieving that goal. Appx256 ('728 Patent claim 1); Appx380 ('751 Patent, claim 25). Neither the claims nor the specifications identify what these "parameters" or "attributes" might be.

Similarly, the claims fail to provide any detail as to how data is stored or transmitted. Where the specifications describe storage or transmission at all, they emphasize that *any* storage medium or communications protocol could be used without limitation. *See e.g.*, Appx310 at 5:48-51 ("[T]he current invention applies to all forms and manners of memory devices including, but not limited to, storage devices utilizing magnetic, optical, and chemical techniques, or any combination thereof."); Appx372 at 9:25-30 ("The compressed data is transmitted over the communication channel 24 via a communication stack using any suitable protocol (e.g., RTP (real time protocol) using RTCP (real-time control protocol), TCP/IP, UDP, or any real-time streaming protocol with suitable control mechanism).").

With respect to compression, there is also no means or method specified for selecting an encoder using the unspecified "parameters or attributes." For example, claims of the '728 and '751 Patents provide no detail about how the compression is actually performed—they simply provide that it is done using an "encoder" or with some "compression technique." Appx256 ('728 Patent, claim 1) (reciting that the processor "perform[s] content dependent data compression with the one or more content dependent data compression encoders . . . and to perform data compression with the single data compression encoder"); Appx316 ('908 Patent, claim 1) (reciting that the data accelerator "compress[es]: (i) a first data block with a first compression technique . . . and (ii) a second data block with a second compression technique"); Appx96 ('530 Patent, claim 1) (same); Appx380 ('751 Patent, claim 25) (reciting that it "compress[es] data . . . with the selected encoder"). The '203 Patent is similarly generic. Appx178 ('203 Patent, claim 14) (reciting that it utilizes "decompression decoders configured to decompress").

Similarly, claim elements relating to the speed or result of compression are limited to intended results. Claim 1 of the '908 and '530 Patents recite that "compression and storage occurs faster" but they do not recite how "faster" is achieved—only that it is. Claim 25 of the '751 Patent recites that compression and storage occurs in "less than the time of storing the data block in uncompressed form," but no process is identified for achieving "less" time. Again, claim 25

recites just a result—"compressing the data . . . to produce a compressed data block"—untethered to the "inventive means of achieving the result." *Elec. Power Grp.*, 830 F.3d at 1351.

The claims' generic references to "compression" and aspirational rates or performance benchmarks—such as the "faster than" limitations of the '908, '530, and '751 Patents—are insufficient to rise to the level of specific technical solutions found patent-eligible under § 101. *See, e.g.*, *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015) ("*IV/Capital One I*") ("[O]ur precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility.").

The specifications also do nothing to help confine the abstract language of the claims. Nowhere do the Patents-in-Suit disclose a structure, or even a specific functionality, of any encoder element. Instead, the patents describe encoders as generic components that can be implemented with any combination of "hardware, software, [or] firmware." *See, e.g.*, Appx211 (depicting "Encoder E1 . . . En" boxes within encoder module 30); Appx246 at 6:30-32 ("[T]he present invention may be implemented in various forms of hardware, software, firmware, or a combination."); Appx288 ("Data Storage Accelerator 10"); Appx309 at 4:47-50, Appx309 at 4:57-61 (reciting that the invention can be "various forms of hardware, software, firmware, or a combination," and that described functions can be

"hardware, microinstruction code or application programs"); Appx363 ("State Machine" boxes 27-27N including "compression tables"). The specification states that encoders can perform any "well known" type of compression—again, a purely result-oriented and generic description. *See* Appx247 at 7:13-17 ("[E]ncoder set E1, E2, E3 . . . En may include any number 'n' of . . . encoding techniques currently well known within the art."); Appx313 at 11:16-12:5 (same); Appx93 at 11:16-12:5 (same); Appx375 at 15:25-27 (same). Quite simply, the identified claims of the asserted patents, when viewed in the context of their respective specifications, do no more than "describe a desired function or outcome"—compressing data "without providing any limiting detail that confines the claim to a particular solution to an identified problem." *Affinity Labs*, 838 F.3d at 1269.[2]

[2] Even if the claimed processes made compression more effective and efficient, the claims still do not rise to the level of a "technological solution" or an improvement to a computer's core functionality. *See In re TLI Commc'ns*, 823 F.3d at 612 (finding claims that sought to provide "digital images simply, fast and in such way that the information therefore may be easily tracked" were not directed to an improvement to a computer's functionality because the claims "are directed to the use of conventional or generic technology in a nascent but well-known environment").

2. The Addition of Elements Such as a State Machine Merely Provide a Generic Environment to Carry Out an Abstract Idea

In concluding that the Patents-in-Suit were directed to an abstract idea, the District Court also properly found that concrete elements such as a "state machine" provide only a generic environment to carry out an abstract idea:

> [The Court:] The provision of concrete elements in the patent, like a state machine, merely provide a generic environment in which to carry out an abstract idea and they therefore do not render the claims not abstract.

Appx53-54 at 45:25-46:3.

This finding is consistent with the specification of the '751 Patent. The specification states that the state machine can be implemented using "[g]eneral purpose computers, servers, workstations, personal digital assistants, special purpose microprocessors, dedicated hardware, or and [sic] combination thereof." Appx371 at 8:23-25. Using those generic components, "one or more state machines 27-27*n* are constructed based on a-priori knowledge of the structure and content of one or more given broadcast and data feeds." Appx372 at 9:6-10. Then, "each state machine 27-27*n* comprises a set of compression tables that comprise information for encoding the next character (text, integer, etc.) or sequence of characters in the broadcast data feed, as well as pointers which point to the next state (encoding table) based on the character or character sequence." Appx372 at 9:11-16.

No specific structure for the state machine is disclosed, and Realtime admitted before the District Court that a state machine is a generic computer component:

> [The Court:] So we can get some common ground, you agree that[a state machine is] a generic computer component.
>
> [Realtime:] I agree that state machines are well-known computer components.

Appx39 at 31:17-20. As such, the District Court correctly concluded that a "state machine" provides only a generic environment to carry out an abstract idea. The fact that the claims of the Patents-in-Suit are performed more generally by a computer on digital data does not alter the conclusion that the claims are abstract. *See Content Extraction*, 776 F.3d at 1347 ("[T]he claims in *Alice* also required a computer that processed streams of bits [*i.e.*, digital data], but nonetheless were found to be abstract.").

3. The Mere Manipulation of Data, Without More, Is an Abstract Idea

The District Court also properly found that processes that start with data, add an algorithm, and end with a new form of data are directed to an abstract idea:

> [The Court:] And I would again refer the parties as well to Digitech Image Technology against Electronics for Imaging, Inc., at 758 F[.3d] 1344, and the RecogniCorp decision at 855 F[.3d] 1322, noting that processes that start with data and add in an [algorithm] and end with a new form of data are directed to an abstract idea. That's what we have here.

Appx54 at 46:7-13.

The District Court's finding is well grounded. As the District Court noted, this Court has previously reasoned that "[a] process that started with data, added an algorithm, and ended with a new form of data was directed to an abstract idea." *RecogniCorp*, 855 F.3d at 1327 (citation omitted). Acts of storing or transmitting information are an abstract "ancillary part of such collection and analysis." *Elec. Power Grp.*, 830 F.3d at 1354; *see also Content Extraction*, 776 F.3d at 1347 ("[W]e agree with the district court that the claims of the asserted patents are drawn to the abstract idea of 1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory.").

Processing data by encoding or decoding is also directed to an abstract idea. *RecogniCorp*, 855 F.3d at 1326 ("This method reflects standard encoding and decoding, an abstract concept long utilized to transmit information."); *see also Intellectual Ventures I LLC v. Capital One Financial Corporation*, 850 F.3d 1332, 1340 (Fed. Cir. 2017) ("*IV/Capital One II*") (organizing, displaying, and manipulating data encoded for human- and machine-readability is directed to an abstract concept). The claims of the Patents-in-Suit do not go beyond this.

In fact, the basic concepts claimed in the Patents-in-Suit are well-known techniques that "humans have always performed." *Content Extraction*, 776 F.3d at 1347 ("The concept of data collection, recognition, and storage is undisputedly well-known. Indeed, humans have always performed these functions."). For

example, people have used various techniques for compressing data—such as scientific notation, the use of abbreviations, and shorthand—since long before the advent of computers. *Cf. RecogniCorp*, 855 F.3d at 1326 (finding claim that "reflects standard encoding and decoding" to be "an abstract concept long utilized to transmit information" such as by "[m]orse code, ordering food at a fast food restaurant via a numbering system, and Paul Revere's 'one if by land, two if by sea' signaling system"). And for just as long, people have analyzed data to determine what compression or decompression techniques are most appropriate, and then processed the data using the selected techniques.

4. Unlike *DDR Holdings* and *Visual Memory*, the Claims Do Not Specify How They Achieve the Results They Claim

Realtime's reliance on *DDR Holdings* and *Visual Memory* is misplaced. In its opening brief, Realtime relies on *DDR Holdings* for the assertion that "this Court recognizes . . . particularized systems and methods of digital data compression" as "unquestionably patent eligible." *See* Realtime Br. 41, 44. However, the patents at issue in *DDR Holdings* were not directed to digital data compression. 773 F.3d at 1259. In fact, the court there specifically recognized that the patents were directed to methods and systems of generating a composite web page that combines visual elements of the host and the content of a third party. *Id.* at 1248.

In any event, the claims of the patents in *DDR Holdings* recite "a specific way to automate the creation of a composite web page." *Id.* at 1259. The Patents-in-Suit here by contrast fail to recite "particularized systems and methods" and merely claim results, not the process for achieving those results. Moreover, *DDR Holdings* is inapposite because Realtime's patents do not purport to solve a problem unique to the Internet. *See IV/Capital One I*, 792 F.3d at 1371 (noting that for claims that do not "address problems unique to the Internet, . . . *DDR* has no applicability").

Similarly, *Visual Memory* is distinguishable from the instant case. Realtime argues that its claims are directly analogous to the claims in *Visual Memory* and should therefore be held directed to a patent-eligible subject matter. Realtime Br. 44-45. However, the claims in *Visual Memory* "focus[ed] on a specific asserted improvement in computer capabilities—the use of programmable operational characteristics that are configurable based on the type of processor" for "an enhanced computer memory system" that "permits 'different types of processors to be installed with the subject memory system without significantly compromising their individual performance.'" 867 F.3d at 1259-60. "Specifically, . . . both the specification and the claims expressly state that this improved memory system is achieved by configuring a programmable operational characteristic of a cache memory based on the type of processor connected to the memory system." *Id.* at

1261. For example, the specification explains that "[f]or a system employing a 386 or 386sx system processor, internal cache 16 holds only code data, whereas for a system employing a 486 processor, internal cache 16 holds both code and non-code data." *Id.* (alteration in original). Notably, "[n]one of the claims recite all types and all forms of categorical data storage." *Id.* at 1259.

Realtime's claims, on the other hand, reflect no similar improvement in the way the computer operates. In *Visual Memory*, the patent claims would actually change the performance of the computer memory system, whereas the claims of the Patents-in-Suit here only use generic, off-the-shelf standard components and do not improve the performance of those components. *See*, *e.g.*, Appx246 at 6:30-32; Appx246 at 6:35-37 (noting that "the present invention may be implemented in various forms of hardware, software, firmware, or a combination thereof" and ultimately the system may be implemented on "a general purpose computer or any machine or device having any suitable and preferred microprocessor architecture"). Further, Realtime's claims, unlike the claims in *Visual Memory*, fail to recite a specific solution and instead are directed to mere results. As noted above, the patent in *Visual Memory* specified how it would store data based on specific types of processors. 867 F.3d at 1261. Here, not only do the Patents-in-Suit fail to specify the type of compression or decompression to be performed, they also fail to distinguish between the different claimed encoders: the content dependent and

content independent data encoders. *See, e.g.*, Appx247 at 7:13-17, Appx247 at 7:21-22 (noting that "any number [of] encoding techniques currently well known within the art [can be used] to provide a broad coverage of existing and future data types"); Appx171-172 at 14:66-15:3 ("The decoders D1 . . . Dn may include those lossless encoding techniques currently well known within the art."); *see also* Appx251 at 16:35-62 (noting that the content dependent encoder module can include any "lossless or lossy encoding techniques currently well known within the art" and that the content independent encoder can include any "lossless encoding techniques currently well known within the art").

Thus, the District Court concluded correctly that the Patents-in-Suit are directed to an abstract idea notwithstanding Realtime's extensive reliance on *DDR Holdings* and *Visual Memory*.

5. Realtime's Assertion That the Claims Were Not Considered as a Whole Is Unavailing

Realtime also argues that the District Court "improperly parsed the claims into individual components" and failed to consider the claims as a whole. *See* Realtime Br. 39. Realtime's assertion is incorrect. The claims were considered as a whole, and the fact that the District Court sought clarifying background questions during its hearing does not take away from its robust analysis.

Realtime cites to certain portions of the District Court's hearing where the District Court was discussing the patents and had remarked that it could not

identify any inventive concept. It then sought Realtime's recitation of the inventive concept:

> [The Court:] Now, what you've just said, I still have not heard one non-abstract idea or inventive concept. So now just take what you have just described, break it down and identify for me within that summary an example of a non-abstract or inventive concept.

Appx43 at 35:6-10. Notably, and despite Realtime's arguments to the contrary, the District Court did not request that Realtime break the claim into "individual components and strip[] out critical claim limitations." *See* Realtime Br. 40.

In other portions of the hearing, the District Court also sought answers to clarifying background questions. The District Court was entitled to ask those questions in order to have necessary context. As the District Court properly noted:

> [Realtime:] . . . [I]t's not an appropriate analysis to question the novelty of a claim based on a single element . . . .
>
> [The Court:] I will give you your chance, but I've got to work through it slowly . . . . I'm going to let you at the end say, Judge, you know, you led me down this path. Now you want to come back. I will give you a chance. I've got to understand it.

Appx33 at 25:13-25.

Moreover, Realtime specifically raised this very argument before the District Court. In response, the District Court confirmed that the claims were to be analyzed as a whole and as a combination of elements. *See* Appx42 at 34:2-6 (District Court acknowledges that under the Federal Circuit's analysis "we look at the claim as a whole and the combination of elements in the claim as a whole").

Further, the District Court pointed to its previous written opinion in a different case to illustrate its understanding of the law under Section 101, where it acknowledged the same. See Appx53 at 45:1-4 (citing *In-Depth Test, LLC v. Maxim Integrated Prods., Inc.*, Nos. 14-887-CFC, 14-888-CFC, 2018 WL 6617142, at *4 (D. Del. Dec. 18, 2018) ("[C]laims are considered in their entirety [at step one] to ascertain whether their character as a whole is directed to excluded subject matter." (alteration in original) (citation omitted))). There is therefore no question that the District Court explicitly "followed a thorough process before making [its] decision." Appx52 at 44:17-19.

B. The Claims Of The Patents-In-Suit Fail *Alice* Step Two Because They Lack An Inventive Concept

Under step two of *Alice*, courts consider whether claim elements "individually or as an ordered combination transform the abstract idea . . . into a patent-eligible application of that idea." *In re TLI Commc'ns*, 823 F.3d at 613. "[M]ere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea." *Id.* Instead, an inventive concept requires the claims to "propose a solution or overcome a problem 'specifically arising in the realm of computer [technology]'" beyond the "'recitation of generic computer limitations.'" *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1097 (Fed. Cir. 2016) (alteration in original) (citations omitted). Alternatively, in order for claims to pass step two of *Alice* as an ordered combination, they must

demonstrate a specific, inventive arrangement of elements in the claims. *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

As discussed in further detail below, the District Court properly recognized that the Patents-in-Suit fail under either analysis called for under *Alice* step two.

1. The Claims of the Patents-in-Suit Recite No Specific Technical Solution Sufficient to Supply an Inventive Concept

The claims of the Patents-in-Suit recite no specific technical solution. *See FairWarning IP*, 839 F.3d at 1097. The only tangible elements of the Patents-in-Suit are generic computer elements: a processor (*e.g.*, '728 Patent, claim 1), memory (*e.g.*, '908 and '530 Patents, claim 1), and encoders (all).

The processor and memory are generic computer components and are "insufficient to add an inventive concept to an otherwise abstract idea." *In re TLI Commc'ns*, 823 F.3d at 614; *Alice*, 573 U.S. at 226 ("Nearly every computer will include a 'communications controller' and 'data storage unit' capable of performing the basic calculation, storage, and transmission functions required by the method claims.").

The "encoders" are similarly generic. The Patents-in-Suit concede that the claims encompass all manner of encoding, which itself is not new and well-known in the relevant art. Appx247 at 7:13-17 ("The encoder set E1, E2, E3 . . . En may

include any number 'n' of those lossless encoding techniques currently well known within the art."); Appx168 at 7:7-9 (same); Appx313 at 11:67-12:3 (same); Appx93 at 11:41-44 (same); Appx375 at 15:24-27 (same).

Realtime now argues that its claims "require specific, unconventional combinations of specially configured computer elements." Yet, it does not credibly point to any. *See* Realtime Br. 51. Instead, Realtime paraphrases its claims as proof of "unconventional" and "specially configured computer elements." Realtime primarily cites the claimed "data accelerator" as unconventional, as "it requires two different compression techniques and the structural capability of compressing and storing digital data faster than the digital data can be stored in uncompressed form." Realtime Br. 52. But this merely recites a desired result and not any limiting techniques. For example, Realtime does not cite a new compression technique, or how the compressing and storing of digital data becomes "faster." It therefore does not supply the "restriction on how the result is accomplished." *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1316 (Fed. Cir. 2016) ("*IV/Symantec*").

Realtime's argument that the processor recited in claim 1 of the '728 Patent is not generic is also unconvincing. Realtime argues that the processor "must be specially configured to perform the recited, non-conventional functions." Realtime Br. 55. But merely configuring the processor in a particular way does not

somehow change the fact that the processor is a generic computer component that is simply being used to carry out the compressing of the data. *See Elec. Power Grp.*, 830 F.3d at 1354 (finding claims to be directed to a patent-ineligible abstract idea because "the focus of the claims [wa]s not on such an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools").

Realtime also argues that "the mere fact that the claims utilize generic computer components does not render them ineligible." Realtime Br. 54. However, the cases on which Realtime relies—*Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), and *Visual Memory*—stand only for the proposition that an "invention's ability to run on a general-purpose computer [does not] doom[] the claims" where "the claims . . . are directed to an improvement in the functioning of a computer." *Enfish*, 822 F.3d at 1338; *see also Visual Memory*, 867 F.3d at 1262 (same). Unlike *Enfish* and *Visual Memory*, the Patents-in-Suit here are not directed to an improvement in the functioning of a computer, but are instead directed to the abstract idea of analysis, compression, decompression, and storage of data, and using computers to carry out that idea.

2. Contrary to Realtime's Assertion, The Patents Do Not Provide Unconventional Solutions to Known Problems In Data Compression

Realtime argues that an inventive concept exists because the Patents-in-Suit solve certain known prior art problems. In doing so, Realtime relies heavily on the specifications of the Patents-in-Suit. *See, e.g.*, Realtime Br. 50-51 ("The '728 and '203 patents addressed problems relating to, *inter alia*, 'data dependency,' 'significant variations in the compression ratio obtained when using a single lossless data compression technique for data streams having different data content and data size,' and the 'extremely large number of application programs, some of which do not possess published or documented file formats, data structures, or data type descriptors.'" (citing specification)); *see generally* Realtime Br. Sec. VII.C.2.

But nothing in the specifications goes beyond a generic disclosure for any of the key elements of the claims such as the compression of data or "faster" compression and storage. *See, e.g.*, Appx211 (depicting "Encoder E1 . . . En" boxes within encoder module 30); Appx246 at 6:30-32 ("[T]he present invention may be implemented in various forms of hardware, software, firmware, or a combination."); Appx288 ("Data Storage Accelerator 10"); Appx309 at 4:47-50, Appx309 at 4:57-61 (reciting that the invention can be "various forms of hardware, software, firmware, or a combination," and that described functions can be

"hardware, microinstruction code or application programs"); Appx363 ("State Machine" boxes 27-27N including "compression tables").

Such abstract descriptions are recitations of generic computer limitations. *See FairWarning IP*, 839 F.3d at 1097 (an inventive concept requires the claims to "propose a solution or overcome a problem 'specifically arising in the realm of computer [technology]'" beyond the "'recitation of generic computer limitations'") (alteration in original) (citations omitted). The claims of the patents do not solve the problems identified in the prior art and certainly do not amount to an inventive concept under the *Alice* analysis. *See In re TLI Commc'ns*, 823 F.3d at 615 ("[T]he specification limits its discussion of these components to abstract functional descriptions devoid of technical explanation as to how to implement the invention.").

In any event, even if there is an inventive concept in the specification, it is not captured in the claims. *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017) ("The main problem that Two-Way Media cannot overcome is that the *claim*—as opposed to something purportedly described in the specification—is missing an inventive concept." (emphasis in original)), *cert. denied*, 139 S. Ct. 378 (2018).

3. The Claims Were Considered As An Ordered Combination

The claims merely recite the abstract idea of analyzing, compressing, storing, and transmitting information using generic computer components. The ordering of the elements in the Patents-in-Suit is basic: information is (and must necessarily be) analyzed to identify an "attribute" or "parameter" before that attribute or parameter can be used to select an encoder; the encoder must compress data before that data can be stored or transmitted. *Maxon, LLC v. Funai Corp., Inc.*, 726 F. App'x 797, 800 (Fed. Cir. 2018) (affirming district court in finding that "[t]he only method of reaching the result the patent teaches is, in essence, use of generic computer components for their standard purposes to achieve the result. Nothing about the order of the elements, or the way they are combined, suggests inventiveness"). And the claims do not recite any particular tool or element with a specialized arrangement with respect to any other element.

Yet, Realtime argues extensively that the District Court did not consider the claims as an ordered combination. *See, e.g.*, Realtime Br. 47-50. Realtime argues that "considering the recited components as an ordered combination, it is clear that the claims recite specific, discrete implementations of digital data compression." *See* Realtime Br. 47, 54.

But in finding that the patents were ineligible, the District Court had the benefit of extensive briefing on this argument now raised by Realtime. *See*

Appx1216-1217 (incorporating Appx2115-2116, Appx2120, Appx2124); Appx1226 (incorporating Appx2148-2150); Appx1511 (incorporating Appx2115-2116, Appx2120, Appx2124); Appx1523 (incorporating Appx2148-2150); Appx1804 (incorporating Appx1899-1900, Appx1967, Appx2036, Appx2041, Appx2044-2045); Appx1815 (incorporating Appx1924-1927, Appx1995-1996, Appx2064-2067).

In *Bascom*, this Court previously considered a claim that recites "installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user." *Bascom*, 827 F.3d at 1350. This Court determined that the specific arrangement of "associating individual accounts with their own filtering scheme and elements while locating the filtering system on an ISP server . . . . cannot be said, as a matter of law, to have been conventional or generic." *Id.* But unlike in *Bascom*, there is no inventive arrangement of elements in the claims of the Patents-in-Suit. The claims instead identify only conventional components in conventional arrangements, such as processors to perform compression or decompression of data, and memory that stores that data. *Compare VideoShare, LLC v. Google, Inc.*, No. 13-cv-990 (GMS), 2016 WL 4137524, at *8 (D. Del. Aug. 2, 2016) ("Rather than demonstrating *why* the claim limitations are *not* well-understood, routine, and conventional, VideoShare merely makes conclusory statements to this effect without

explanation."), *aff'd*, 695 F. App'x 577 (2017); *with Bascom*, 827 F.3d at 1350 ("Filtering content on the Internet was already a known concept, and the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content.").

4. The District Court Did Not Improperly Conflate Issues of Novelty and Obviousness With Its Analysis

In its brief, Realtime also argues that the District Court (i) conflated issues of novelty, obviousness, and inventive concept; and (ii) improperly resolved questions of fact on novelty and obviousness. *See* Realtime Br. 47-50.

These assertions are incorrect.[3] Realtime appears to have cherry-picked certain statements made by the District Court at the hearing without providing the necessary context. It is true that the District Court sought answers to certain clarifying background questions during the hearing. But in doing so, the District Court specifically noted:

> [The Court:] I will give you your chance, but I've got to work through it slowly . . . . I'm going to let you at the end say, Judge, you know, you led me down this path. Now you want to come back. I will give you a chance. I've got to understand it.

Appx33 at 25:16-25.

[3] The inquiry under § 101 and the inquiry under novelty and obviousness can also sometimes overlap. *See Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) ("It is true that 'the § 101 patent-eligibility inquiry and, say, the § 102 novelty inquiry might sometimes overlap.'" (citation omitted)).

During that same hearing the District Court also made clear on multiple occasions that it was applying the correct test in determining that the claims at issue provided no inventive concept under step two of the *Alice* inquiry. For example, the District Court stated:

> [The Court:] These are abstract ideas, and none of the patents, getting to the step 2 inquiry, provide an inventive concept. None of them point to a technical solution to compress or transmit data more efficiently. At bottom the[] Patents claim a desired result and they do not present or recite a technical solution to achieve that result, and therefore they're not patent eligible.

Appx56 at 48:19-25. The District Court properly applied the *Alice* analysis. It did not conflate or improperly apply any issues of novelty or obviousness.

In fact, the District Court repeatedly gave Realtime the opportunity to identify an inventive concept, but Realtime was unable to specify a technological innovation beyond vague, conclusory assertions:

> [The Court:] So I'm waiting for you to tell me something that is inventive or is not abstract and I have not heard one thing so far.
>
> [Realtime:] So, Your Honor what's inventive about this is, computers are able to run faster when you implement a system like this. . . . . They're able to improve their performance.
>
> [The Court:] Then tell me something not abstract or inventive about this system you keep talking about.
>
> [Realtime:] So what is not abstract and what is inventive about this system is using compression in a new way that was not known in the art to not just compress willy-nilly, but rather to make decisions and to control the compression in such . . . a way that it would not, it would not be used in a way that would slow down the system. It was designed only to be used when it would speed it up and to be used in

> specific compression techniques only when it actually would help speed up the performance of the system.
>
> [The Court:] All right.
>
> [Realtime:] Selectively.
>
> [The Court:] Now, what you've just said, I still have not heard one non-abstract idea or inventive concept. So now just take what you have just described, break it down and identify for me within that summary an example of a non-abstract or inventive concept.

Appx42-43 at 34:8-35:10.

C. The Prior Rulings That Realtime Cites Are Distinguishable

Realtime cites to the prior § 101 rulings in *Carbonite* and *Actian*. In both of those cases, a district judge adopted the recommendations of Magistrate Judge Love in the Eastern District of Texas, in which he recommended denial of motions to dismiss. But Realtime's reliance on those two rulings is procedurally unavailing because, *inter alia*, Magistrate Judge Love did not consider the '751 or '203 Patents, neither his recommendation nor the district judge adoptions of the same are binding authority on this Court, and no such decisions were affirmed on appeal. *See* Realtime Br. Sec. IV.B. (citing *Carbonite* and *Actian*).

But these rulings are substantively incorrect as well. Importantly, the ruling in *Carbonite* is inconsistent with the language of the specifications of the Patents-in-Suit. In *Carbonite*, Magistrate Judge Love attempted to distinguish the claims of the '728 Patent from the doomed claims of a patent found invalid under § 101 in *RecogniCorp*. Specifically, he found that claim 1 of the '728 Patent was more than

"mere encoding and decoding" because "[i]t improves typical data compression by compressing the data stream through content dependent and independent data recognition, as well as a plethora of encoders to achieve its maximum compression." Appx785.

That finding is inconsistent with the specification of the '728 Patent. The '728 Patent discloses that content dependent and content independent data encoders can be the same, and that both are well known in the art. *See* Appx251 at 16:35-62 (noting that the content dependent encoder module can include any "lossless or lossy encoding techniques currently well known within the art" and that the content independent encoder can include any "lossless encoding techniques currently well known within the art"). Thus, because the claims ultimately reflect nothing more than encoding and decoding, they should be found invalid like the claims in *RecogniCorp*.

In addition, the courts in *Carbonite* and *Actian* did not have the benefit of the admissions made by Realtime at the District Court's hearing in this case. For example, at the District Court's hearing, when pressed to identify how its system was non-abstract or to identify an inventive concept, Realtime stated:

> So what is not abstract and what is inventive about this system is using compression in a new way that was not known in the art to not just compress willy-nilly, but rather to make decisions and to control the compression in such . . . a way that it would not, it would not be used in a way that would slow down the system. It was designed only to be used when it would speed it up and to be used in specific

> compression techniques only when it actually would help speed up the performance of the system.

Appx42-43 at 34:19-35:3.

The District Court was not persuaded by this explanation. But it nevertheless gave Realtime additional opportunities to identify how its system was non-abstract or inventive:

> [The Court:] Now, what you've just said, I still have not heard one non-abstract idea or inventive concept. So now just take what you have just described, break it down and identify for me within that summary an example of a non-abstract or inventive concept.

Appx43 at 35:6-10.

Despite repeated efforts by the District Court, Realtime was still unable to persuasively explain that the claims of the Patents-in-Suit were not abstract and that they contained an inventive concept. The courts in *Carbonite* and *Actian* did not have the benefit of this hearing or the admissions by Realtime.

In any event, both of the prior rulings were extensively cited by Realtime during the District Court's hearing, and the rulings were part of the record considered by the District Court. Appx25-27 at 17:18-19:17; Appx47 at 39:2-10.[4]

[4] In addition, the district court in *Actian* mostly rested its ruling on the necessity of claim construction due to disputes between the parties regarding the definitions of certain terms. *See* Appx807; Appx810 ("Claim construction is therefore a necessity before the Court can evaluate patent-eligibility under § 101."). There is no such dispute regarding claim construction issues here.

D. Realtime's Attempts To Distinguish The Cases Relied Upon By The District Court Fail

In its order, the District Court properly relied upon the numerous cases that support its ruling, including *McRo*, *In re TLI Communications*, *Digitech*, and *RecogniCorp*. Realtime fails to persuasively distinguish the claims of the Patents-in-Suit from those cited cases.

The District Court cited *McRo* for the proposition that "the claims lack a specific means or method that improves the relevant technology and instead merely invoke generic processes and machinery to achieve a desired result." Appx53 at 45:12-20 (citing *McRo*, 837 F.3d at 1314). And while *McRo* does uphold the patent-eligibility of the claims at issue in that case under § 101, those claims are distinguishable from the claims of the Patents-in-Suit here. Notably, the claims in *McRo* described a specific set of rules "defin[ing] morph weight sets as a function of the timing of phoneme sub-sequences" to improve three-dimensional computer animation. 837 F.3d at 1313. Realtime's claims, on the other hand, provide no such detailed rule set, and fail to recite how the claims specifically achieve the compression and decompression functionality or the "faster" results that they assert. Thus, Realtime's claims "are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *Id.* at 1314.

The District Court cited *In re TLI Communications* for the proposition that "[t]he provision of concrete elements in the patent, like a state machine, merely

provide a generic environment in which to carry out an abstract idea and they therefore do not render the claims not abstract." Appx53-54 at 45:25-46:6 (citing *In re TLI Commc'ns*, 823 F.3d 611). The District Court also cited *Digitech* and *RecogniCorp*, "noting that processes that start with data and add in an [algorithm] and end with a new form of data are directed to an abstract idea. That's what we have here." Appx54 at 46:7-13 (citing generally *Digitech*, 758 F.3d 1344; *RecogniCorp*, 855 F.3d at 1322).

Realtime's main argument to distinguish these cases rests on conclusory assertions that the cases are inapposite because the claims of the patents in those cases were not directed to an improvement in computer functionality, while the claims of the Patents-in-Suit here are. Realtime Br. 57-59.

But the cases are not distinguishable. As in *In re TLI Communications* and *Digitech*, Realtime can only cite to a generic computer environment. Realtime asserts that its patents "require specific combinations of computer machinery specially configured to perform specific functions (e.g., encoders, data accelerators, state machines)," but those cited components are generic computer parts not limited by the claims or specifications of the Patents-in-Suit, and are combined and used in a generic, conventional way. In other words, the claims of the Patents-in-Suit, like the claims of the *Digitech* and *In re TLI Communications* patents, are "not tied to a specific structure or machine," *Digitech*, 758 F.3d at 1351, and are

"directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem." *In re TLI Commc'ns*, 823 F.3d at 612.

Realtime's additional arguments distinguishing the cases cited by the District Court are likewise unavailing. For example, although Realtime asserts that *Digitech* predates *Alice* (Realtime Br. 57), the case is still good law and relied upon by subsequent decisions postdating *Alice*. *See, e.g.*, *RecogniCorp*, 855 F.3d at 1326.

Similarly, Realtime argues that *RecogniCorp* is distinguishable because the claimed invention "does not even require a computer." Realtime Br. 58 (citing *RecogniCorp*, 855 F.3d at 1326, 1328). However, requiring a computer does not transform a patent-ineligible idea into an eligible one. *IV/Capital One I*, 792 F.3d at 1366 ("An abstract idea does not become nonabstract by limiting the invention to a particular field of use or technological environment, such as . . . . a computer.").

E. The District Court's Ruling Was Entirely Proper, Even Without A Subsequent Written Order

Realtime makes frequent reference to the fact that the District Court issued no written opinion. *See, e.g.*, Realtime Br. 39, 59. Realtime argues that because of the lack of a written order, "it is thus impossible to discern the court's reasoning in applying the foregoing cases." Realtime Br. 59.

But the District Court did not err in not issuing a written order because the hearing served as the order. *See Petrosky v. Nike, Inc.*, No. 91-1512, 1992 WL 78089, at *1 (Fed. Cir. Apr. 21, 1992) (affirming the district court despite fact that there was "no written opinion nor are there any findings of facts or conclusions of law" because of the extensive briefing and record from the hearing); *Pridgen v. Law*, 299 F. App'x 211, 211-12 (3d Cir. 2008) (noting that there was no written opinion but nevertheless affirming the judgment based on the transcript).

Further, the District Court's reasoning at the hearing is clear. For example, the District Court made a finding that "[t]he provision of concrete elements in the patent . . . merely provide a generic environment in which to carry out an abstract idea and they therefore do not render the claims not abstract." Appx53-54 at 45:25-46:3. The District Court then immediately cited to a case that supports that finding, noting "I would refer the parties to *In re: TLI Communications LLC Patent Litigation.*" Appx54 at 46:3-6.

The District Court's ruling is not incognizable merely because its reasoning and findings are unfavorable to Realtime. Furthermore, it is respectfully submitted that a full reading of the transcript for the hearing before the District Court is all that is needed to dispose of this appeal. The District Court provided Realtime's counsel with numerous, numerous opportunities to present something non-abstract about the Patents-in-Suit and/or something inventive about any limitations of the

claims of the Patents-in-Suit. Realtime failed to do so. The District Court then proceeded to render a thoughtful, detailed decision. Criticizing the District Court for delivering that decision from the bench makes no sense.

II. The District Court Was Within Its Discretion To Deny Realtime's Request For Leave To Amend

The District Court did not abuse its discretion in denying Realtime's request for leave to amend. Third Circuit precedent finds that district courts act within the bounds of their discretion when they reject requests for leave to amend in precisely the circumstances present here, in which the plaintiff merely added a sentence in its brief in opposition to a motion to dismiss asking for leave to amend, "never filed a motion to amend," and failed to "provide the district court with a proposed amended complaint." *Ramsgate*, 313 F.3d at 161; *Fletcher-Harlee Corp. v. Pote Concrete Contractors, Inc.*, 482 F.3d 247, 252 (3d Cir. 2007) ("Indeed, we have held that a failure to submit a draft amended complaint is fatal to a request for leave to amend.").

Furthermore, a proposed amended complaint is expressly *required* by the District of Delaware Local Rules. D. Del. L.R. 15.1(a) ("A party who moves to amend a pleading shall attach to the motion . . . [t]he proposed pleading as amended. . . ."). Realtime never filed a motion to amend or submitted a proposed amended complaint and does not even identify on appeal (let alone before the District Court) what "factual allegations" it would add to save its Complaint. Thus,

Realtime's request was properly denied. *See Lake v. Arnold*, 232 F.3d 360, 374 (3d Cir. 2000) (finding district court did not abuse discretion in denying request for leave to amend despite "the District Court's lack of findings or justification" because plaintiff's "failure to provide a draft amended complaint [was] an adequate basis on which the court could deny the plaintiff's request"). Further, Realtime's reliance on *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018), is misplaced because there, the patent owner actually attached a proposed amended complaint when it moved to amend. *Id.* at 1125. Thus, the District Court did not abuse its discretion in denying Realtime's request for leave to amend.

CONCLUSION

Every claim of the Patents-in-Suit is directed to the abstract idea of analysis, compression, decompression, or storage of data, and none of the claims provides any inventive concept capable of transforming that abstract idea into a patent-eligible invention under 35 U.S.C. § 101. Accordingly, Defendants-Appellees respectfully request that this Court affirm the District Court's judgment that the Patents-in-Suit are invalid under § 101. Further, the District Court was within its discretion to deny Realtime's undeveloped request for leave to amend. Thus, Defendants-Appellees respectfully request that this Court affirm the District Court's ruling denying Realtime's leave to amend.

DATED: March 20, 2020

Respectfully submitted,

PEARL COHEN
ZEDEK LATZER BARATZ LLP

By: /s/ Guy Yonay

Guy Yonay
1500 Broadway, 12th Floor
New York, NY 10036
Tel: (646) 878-0808

Counsel for Appellee, Reduxio Systems, Inc.

SKADDEN, ARPS,
SLATE, MEAGHER & FLOM LLP

By: /s/ John M. Neukom

John M. Neukom
James Y. Pak
Michelle Kao
525 University Avenue, Suite 1400
Palo Alto, California 94301
Tel: (650) 470-4500

Counsel for Appellee, Fortinet, Inc.

MITCHELL & COMPANY

By: /s/ Brian E. Mitchell

Brian E. Mitchell
4 Embarcadero Center, Suite 1400
San Francisco, CA 94111
Tel: (415) 766-3515

Counsel for Appellee, Panzura, Inc.

ZUBER LAWLER
& DEL DUCA LLP

By: /s/ Joshua M. Masur

Joshua M. Masur
2000 Broadway Street, Suite 154
Redwood City, CA 94063
Tel: (650) 434-8538

Counsel for Appellee, Aryaka Networks, Inc.

CERTIFICATE OF COMPLIANCE

The brief complies with the type-volume limitation of Federal Circuit Rule 32(a). This brief contains 13,467 words, excluding the parts of the brief exempted under Federal Rules of Appellate Procedure 32(f) and Federal Circuit Rule 32(b).

The brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type-style requirements of Federal Rule of Appellate Procedure 32(a)(6). This brief has been prepared in a proportionally spaced typeface using Microsoft Word in 14-point Times New Roman font.

DATED: March 20, 2020 By: /s/ John M. Neukom
John M. Neukom

CERTIFICATE OF SERVICE

I hereby certify that on March 20, 2020, I electronically filed the foregoing with the Clerk of the Court of the United States Court of Appeals for the Federal Circuit by using the appellate CM/ECF System.

I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

DATED: March 20, 2020 By: /s/ John M. Neukom
John M. Neukom