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.,
Defendants-Appellees.

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

---

APPELLANT'S OPENING BRIEF

Marc A. Fenster
mfenster@raklaw.com
Reza Mirzaie
rmirzaie@raklaw.com
Paul A. Kroeger
pkroeger@raklaw.com
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Tel: (310) 826-7474
Fax: (310) 826-6991

Attorneys for Plaintiff-Appellant Realtime Data LLC

CERTIFICATE OF INTEREST

Pursuant to Federal Circuit Rule 47.4(a)(1) and Federal Rule of Appellate Procedure 26.1, counsel for Plaintiff-Appellant Realtime Data LLC certifies the following:

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

   - Realtime Data LLC d/b/a IXO..

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

   - Not applicable. Realtime Data LLC d/b/a IXO. is a real party in interest.

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 Realtime Data LLC in the trial court, or are expected to appear in this Court are:

   - Marc A. Fenster, Reza Mirzaie, Brian D. Ledahl, Paul A. Kroeger, C. Jay Chung, and Stanley H. Thompson of Russ August & Kabat
   - Stephen B. Brauerman and Sara E. Bussiere of Bayard, P.A.

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:

The following cases are pending in the U.S. District Court for the District of Delaware:

- *Realtime Data LLC v. Fortinet, Inc.*, Case No. 1:17-cv-01635-CFC
- *Realtime Data LLC v. Panzura, Inc.*, Case No. 1:18-cv-01200-CFC
- *Realtime Data LLC v. MongoDB Inc.*, Case No. 1:19-cv-00492-CFC
- *Realtime Data LLC v. Open Text, Inc.*, Case No. 1:19-cv-00394-CFC
- *Realtime Data LLC v. Kaminario, Inc.*, Case No. 1:19-cv-00350-CFC
- *Realtime Data LLC v. Nimbus Data, Inc.*, Case No. 1:19-cv-00279-CFC
- *Realtime Data LLC v. CTERA Networks, LTD.*, Case No. 1:18-cv-02017-CFC
- *Realtime Data LLC v. SolarWinds Worldwide, LLC*, Case No. 1:18-cv-01995-CFC
- *Realtime Data LLC v. Quest Software, Inc.*, Case No. 1:18-cv-01964-CFC
- *Realtime Data LLC v. Spectra Logic Corporation*, Case No. 1:17-cv-00925-CFC
- *Realtime Data LLC v. Array Networks Inc.*, Case No. 1:17-cv-00800-CFC

The following cases are pending in the U.S. District Court for the District of Massachusetts:

- *Realtime Data LLC v. Sungard Availability Services, LP*, Case No. 1:18-cv-12227-IT
- *Realtime Data LLC v. Carbonite, Inc.*, Case No. 1:17-cv-12499-IT
- *Realtime Data LLC v. Acronis, Inc. Ltd*, Case No. 1:17-cv-11279-IT

The following cases are pending in the U.S. District Court for the Northern District of California:

- *Realtime Data LLC v. Veritas Technologies LLC*, Case No. 3:18-cv-06029-SI
- *Realtime Data LLC v. Fujitsu America, Inc.*, Case No. 3:17-cv-02109-SK

Dated: December 6, 2019

/s/ Marc A. Fenster
Marc A. Fenster
mfenster@raklaw.com
Reza Mirzaie
rmirzaie@raklaw.com
Paul A. Kroeger
pkroeger@raklaw.com
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Tel: (310) 826-7474
Fax: (310) 826-6991

Attorneys for Plaintiff-Appellant
Realtime Data LLC

TABLE OF CONTENTS

CERTIFICATE OF INTEREST i

TABLE OF AUTHORITIES vii

STATEMENT OF RELATED CASES x

I. INTRODUCTION 1

II. JURISDICTIONAL STATEMENT 3

III. STATEMENT OF ISSUES FOR REVIEW 3

IV. STATEMENT OF THE CASE 4

A. The Asserted Patents Claim Inventions Related to Digital Data Compression and Are Aimed Toward Solving Problems Unique to Digital Computer Data 4

1. The ’728 and ’203 Patents 5

2. The ’908 and ’530 Patents 10

3. The ’751 Patent 14

B. Prior § 101 Rulings Upholding the Patentability of Realtime’s Patents 17

1. The *Carbonite* Ruling 17

2. The *Actian* Ruling 21

C. The Delaware District Court’s Erroneous § 101 Ruling 22

D. The District Court’s Denial of Leave to Amend 31

V. SUMMARY OF ARGUMENT 31

VI. STANDARD OF REVIEW 34

VII. ARGUMENT 35

A. The Legal Standard for Determining Patent Eligibility Under § 101 35

B. The District Court Erred in Holding that All Five Asserted Patents Across Three Distinct Patent Families Are Directed to An Abstract Idea Under *Alice* Step One 39

1. The District Court improperly parsed the claims into individual components to determine whether those components are abstract and failed to consider the claims as a whole 39

2. It is clear from the faces of the asserted patents that they are directed to improved, particularized methods of digital data compression, and thus the District Court erred in concluding that they are directed an abstract idea..... 41

C. The District Court Erred in Holding that The Five Asserted Patents Do Not Provide Inventive Concepts Under *Alice* Step Two..... 47

1. The District Court improperly failed to consider the claims as an ordered combination, conflated the issues of novelty, obviousness, and inventive concept, and improperly resolved questions of fact based on its erroneous and unsupported factual conclusion regarding purported obviousness..... 47

2. Contrary to the District Court's ruling, the asserted patents provide unconventional solutions to known problems in digital data compression and therefore provide inventive concept 50

D. The Cases Referenced by the District Court Are Distinguishable and Do Not Support a Finding of Unpatentability Under § 101 56

E. The District Court Abused Its Discretion in Denying Realtime's Request for Leave to Amend..... 59

VIII. CONCLUSION..... 60

CERTIFICATE OF COMPLIANCE 62

CERTIFICATE OF SERVICE 63

ADDENDUM

TABLE OF AUTHORITIES

Cases

Aatrix Software, Inc. v. Green Shades Software, Inc.,
882 F.3d 1121 (Fed. Cir. 2018) 35, 49, 60

Alice Corp. Pty. v. CLS Bank Int'l,
573 U.S. 208 (2014) ..... *passim*

Alston v. Countrywide Fin. Corp.,
585 F.3d 753 (3d Cir. 2009) 34

Amdocs (Israel) Ltd. v. Openet Telecom, Inc.,
841 F.3d 1288 (Fed. Cir. 2016) 55

Ancora Techs., Inc. v. HTC Am., Inc.,
908 F.3d 1343 (Fed. Cir. 2018) 35

Ballentine v. United States,
486 F.3d 806 (3d Cir. 2007) 34

BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC,
827 F.3d 1341 (Fed. Cir. 2016) 39, 47, 54

Berkheimer v. HP Inc.,
881 F.3d 1360 (Fed. Cir. 2018) 49

Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n,
776 F.3d 1343 (Fed. Cir. 2014) 34

Core Wireless Licensing v. LG Elecs., Inc.,
880 F.3d 1356 (Fed. Cir. 2018) 38

Data Engine Techs. LLC v. Google LLC,
906 F.3d 999 (Fed. Cir. 2018) 38

Diamond v. Diehr,
450 U.S. 175 (1981) 48

Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.,
758 F.3d 1344 (Fed. Cir. 2014) 30, 57

Enfish, LLC v. Microsoft Corp.,
822 F.3d 1327 (Fed. Cir. 2016) 36, 37, 40, 54

Finjan, Inc. v. Blue Coat Sys., Inc.,
879 F.3d 1299 (Fed. Cir. 2018) 38, 55

In re TLI Commc'ns LLC Patent Litig.,
823 F.3d 607 (Fed. Cir. 2016) 30, 57

McGinley v. Franklin Sports, Inc.,
262 F.3d 1339 (Fed. Cir. 2001) 39, 49

McRO, Inc. v. Bandai Namco Games Am. Inc.,
837 F.3d 1299 (Fed. Cir. 2016) 30, 40, 55, 56

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

Sands v. McCormick,
502 F.3d 263 (3d Cir. 2007) 34

Spuck v. Clearfield Cty., Pa.,
540 F. App'x 73 (3d Cir. 2013) 34

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

Visual Memory LLC v. NVIDIA Corp.,
867 F.3d 1253 (Fed. Cir. 2017) 37, 44, 54, 55

Statutes

28 U.S.C. § 1291 3

28 U.S.C. § 1295 3

28 U.S.C. § 1331 3

28 U.S.C § 1338 3

35 U.S.C. § 101 ..... *passim*

STATEMENT OF RELATED CASES

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

The following cases pending in the U.S. District Court for the District of Delaware may be directly affected by this Court's decision:

- *Realtime Data LLC v. Fortinet, Inc.*, Case No. 1:17-cv-01635-CFC
- *Realtime Data LLC v. Panzura, Inc.*, Case No. 1:18-cv-01200-CFC
- *Realtime Data LLC v. MongoDB Inc.*, Case No. 1:19-cv-00492-CFC
- *Realtime Data LLC v. Open Text, Inc.*, Case No. 1:19-cv-00394-CFC
- *Realtime Data LLC v. Kaminario, Inc.*, Case No. 1:19-cv-00350-CFC
- *Realtime Data LLC v. Nimbus Data, Inc.*, Case No. 1:19-cv-00279-CFC
- *Realtime Data LLC v. CTERA Networks, LTD.*, Case No. 1:18-cv-02017-CFC
- *Realtime Data LLC v. SolarWinds Worldwide, LLC*, Case No. 1:18-cv-01995-CFC
- *Realtime Data LLC v. Quest Software, Inc.*, Case No. 1:18-cv-01964-CFC
- *Realtime Data LLC v. Spectra Logic Corporation*, Case No. 1:17-cv-00925-CFC
- *Realtime Data LLC v. Array Networks Inc.*, Case No. 1:17-cv-00800-CFC

The following cases pending in the U.S. District Court for the District of Massachusetts may be directly affected by this Court's decision:

- *Realtime Data LLC v. Sungard Availability Services, LP*, Case No. 1:18-cv-12227-IT
- *Realtime Data LLC v. Carbonite, Inc.*, Case No. 1:17-cv-12499-IT
- *Realtime Data LLC v. Acronis, Inc. Ltd*, Case No. 1:17-cv-11279-IT

The following cases pending in the U.S. District Court for the Northern District of California may be directly affected by this Court's decision:

- *Realtime Data LLC v. Veritas Technologies LLC*, Case No. 3:18-cv-06029-SI
- *Realtime Data LLC v. Fujitsu America, Inc.*, Case No. 3:17-cv-02109-SK

I. INTRODUCTION

The District Court erred in concluding, at the pleading stage and without a written ruling, that 159 patent claims across five asserted patents and three distinct patent families, each of which are directed to methods and systems for digital data compression, are invalid under 35 U.S.C. § 101. Despite multiple judges in four separate rulings from two different districts having held that the *very same* patents asserted here, and related patents, are § 101 eligible, the District Court improperly focused on only *one claim* of one of the five asserted patents, parsed that claim into individual components to analyze whether each of those components, individually, involves an abstract idea, stripped out critical claim limitations, and ignored the advances and improvements to digital data compression technology expressly claimed in the patents. Similarly, in concluding that the patents lack inventive concept, the District Court improperly focused on whether individual claim elements are conventional, failed to consider the claims as an ordered combination, conflated issues of novelty, obviousness, and inventive concept, and improperly resolved questions of fact based solely on its erroneous conclusions, unsupported by any evidence, regarding the purported "common sense" of the inventions.

Contrary to the District Court's ruling, it is clear from the faces of the patents themselves, which, at the pleading stage, are to be accepted as true and construed in the light most favorable to the patentee, that the claims are directed to specific

improvements in computer functionality and thus are not abstract. More specifically, the patents provide improved, particularized methods of digital data compression that require specific, unconventional combinations of specially configured computer components. The patent claims thus fall squarely within the categories of claims that this Court has repeatedly held to be eligible under § 101.

The District Court's erroneous ruling disregards this Court's binding precedents and the prior district court rulings, and seemingly invents its own standard for evaluating § 101 patentability to invalidate all five asserted patents, without even so much as a written order. The District Court's failure to apply the correct legal standards, and its erroneous conclusions that the patents are directed to an abstract idea and lack inventive concept, contrary to fact and law, constitutes reversible error.

The District Court also abused its discretion in denying, without explanation, Plaintiff-Appellant Realtime Data LLC's ("Realtime") request for leave to amend. The District Court failed to provide any legitimate basis for its decision, simply stating that its practice is "to ignore [requests for leave to amend] and just to grant a motion to dismiss." This also constitutes reversible error.

The District Court's order of dismissal under Rule 12(b)(6) and subsequent judgment of invalidity should be reversed, and each of the asserted patents should be found eligible under § 101.

II. JURISDICTIONAL STATEMENT

Realtime began the proceedings below by filing patent infringement complaints against the Defendants-Appellees. The District Court has jurisdiction of the cases pursuant to 28 U.S.C. §§ 1331 and 1338. Realtime timely appeals from the final judgments entered by the District Court, wherein the District Court found all asserted patents invalid as directed to patent ineligible subject matter under 35 U.S.C. § 101, and from all underlying decisions, orders, and rulings intertwined with or that produced the judgments. This Court has jurisdiction under 28 U.S.C. §§ 1291 and 1295.

III. STATEMENT OF ISSUES FOR REVIEW

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

1. Did the District Court err in concluding, at the pleading stage and without any written ruling, that all five asserted patents in three distinct patent families comprising 159 total claims, each of which discloses methods and systems for digital data compression aimed at solving known problems in conventional data compression systems, are directed to an abstract idea?

2. Did the District Court err in concluding, at the pleading stage and without any written ruling, and without considering the claim elements as an ordered combination, that all 159 patent claims lack inventive concept, merely because some of the individual claim limitations utilize generic computer components and because,

as concluded by the District Court without any evidentiary support, certain aspects of the claimed inventions are "common sense"?

3. Did the District Court err in disregarding the patents' claimed advances and resolving disputed issues of fact based on the Court's unsupported conclusion regarding inventive concept, namely, whether certain aspects of the claimed inventions are "common sense"?

4. Did the District Court abuse its discretion in denying, without explanation, Realtime's request for leave to amend based solely on the District Court's stated practice of ignoring requests for leave to amend and just granting motions to dismiss?

IV. STATEMENT OF THE CASE

A. The Asserted Patents Claim Inventions Related to Digital Data Compression and Are Aimed Toward Solving Problems Unique to Digital Computer Data

This appeal concerns five United States patents from three distinct patent families. Patent Nos. 9,054,728 ("'728 patent") and 8,717,203 ("'203 patent") are in one family, Nos. 9,116,908 ("'908 patent") and 7,415,530 ("'530 patent") are in a second, distinct patent family, and No. 9,667,751 ("'751 patent") is in a third patent family, unrelated to the other two patent families. *See* Appx64–381.

At a high level, these patent families have some commonality in that they teach various improved, particularized digital data compression systems and

methods to address problems specific to digital data. Indeed, the patents themselves expressly state that they deal specifically with limitations and problems arising in the realm of compressing "[d]iffuse digital data," which is "a representation of data that . . . is typically *not easily recognizable to humans* in its native form." Appx88 at 1:15–36 (emphasis added); Appx308 at 1:15–37; Appx244 at 1:34–54; Appx165 at 1:31–51; *see also* Appx368–369 at 1:25–36, 3:21–4:6 (discussing various methods of encryption and digital data compression used in the transmission of digital data). But while the patents are all generally directed to specific methods and systems for digital data compression, each patent represents a distinct invention, and each patent family is directed to different systems and methods of digital data compression, as set forth below.

1. The '728 and '203 Patents

The '728 patent and '203 patent, entitled "Data Compression Systems and Methods," are directed to systems and methods for data compression using a combination of content-independent and content-dependent data compression and decompression. *See* Appx180 at Abstract; Appx244 at 1:34–37; Appx245 at 3:59–62; Appx246 at 6:24–27; Appx102 at Abstract; Appx165 at 1:31–34; Appx166 at 3:55–58; Appx167 at 6:18–21. The '728 and '203 patents address problems relating to lossless data compression techniques, including the "fundamental problem" of their "content sensitive behavior," i.e., "data dependency," which means that "the

compression ratio achieved is highly contingent upon the content of the data being compressed." Appx244 at 2:29–35; Appx165 at 2:26–31. These patents also discuss various other problems with lossless data compression, including that "there are 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," i.e., "natural variation." Appx244 at 2:41–45; Appx165 at 2:38–42. "A further problem is that negative compression may occur when certain data compression techniques act upon many types of highly compressed data," and "many data compression techniques will substantially expand, not compress this type of data." Appx244 at 2:46–50; Appx165 at 2:43–47; *see also* Appx244 at 2:51–67; Appx165 at 2:48–64 (identifying additional problems in lossless data compression).

The '728 and '203 patents explain that while "conventional content dependent techniques," which typically rely on file type descriptors appended to file names such as ".doc," ".txt," etc., may be utilized to combat some of these problems, those content dependent techniques had "[f]undamental limitations" including:

> (1) the extremely large number of application programs, some of which do not possess published or documented file formats, data structures, or data type descriptors;
>
> (2) the ability for any data compression supplier or consortium to acquire, store, and access the vast amounts of data required to identify known file descriptors and associated data types, data structures, and formats; and
>
> (3) the rate at which new application programs are developed and the need to update file format data descriptions accordingly.

Appx244 at 2:65–3:19; Appx165 at 2:64–3:15.

The patents solved these and other problems with compression technology by providing a novel technological solution utilizing a combination of content-dependent and content-independent encoders to compress data blocks based on an analysis of the specific content or type of data being encoded, without relying solely on a descriptor such as a file extension. For example, when one or more digital-data parameters are identified in the content of a digital data block, the invention utilizes a content-dependent compression encoder. And if no such digital-data parameter is identified, the invention utilizes a content-independent encoder. The analysis of the digital data is not based solely a descriptor, thereby eliminating the problems associated with conventional content-dependent compression techniques. *See, e.g.*, Appx251 at 15:60–20:47; Appx172 at 15:53–20:38. Figure 13A, reproduced below, is illustrative of one preferred embodiment depicting a system utilizing a combination of content-dependent and content-independent encoders.

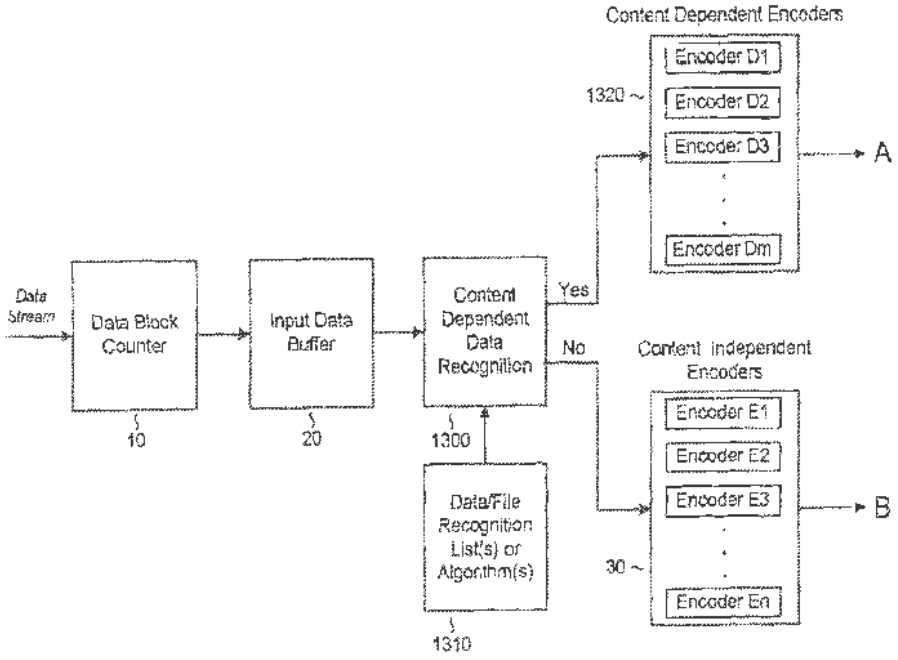


FIGURE 13A

Appx147; Appx226.

There are 25 total claims in the ’728 patent, and 30 claims in the ’203 patent. Asserted claim 1 of the ’728 patent discloses:

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.

Appx256.

Asserted claim 14 of the '203 patent discloses:

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 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.

Appx178.

2. The ’908 and ’530 Patents

The ’908 patent and ’530 patent, entitled “System and Methods for Accelerated Data Storage and Retrieval,” are directed to systems and methods for accelerated data storage and retrieval utilizing lossless data compression and decompression. *See* Appx258 at Abstract; Appx308 at 1:15–18, 2:58–60; Appx309 at 4:42–44; Appx64 at Abstract; Appx88 at 1:15–18, 2:58–60; Appx89 at 4:42–44. The ’530 and ’908 patents addressed problems in the current art relating to digital data compression, including that “high performance disk interface standards . . . offer only the promise of higher data transfer rates through intermediate data buffering in random access memory” and do not address the “fundamental problem” with physical media limitations. Appx308 at 2:34–42; Appx88 at 2:34–42. The patents further explain that “[f]aster disk access data rates are only achieved by the high cost

solution of simultaneously accessing multiple disk drives with a technique known within the art as data striping." Appx308 at 2:42–45; Appx88 at 2:42–45. "Additional problems with bandwidth limitations similarly occur within the art by all other forms of sequential, pseudorandom, and random access mass storage devices." Appx308 at 2:46–51; Appx88 at 2:46–51.

The '928 and '530 patents solved these and other problems with digital data compression by providing novel technological solutions utilizing a plurality of different encoders, and optionally a compression descriptor, for accelerated storage and retrieval of data blocks. The novel approaches taught by the patents include, among other things:

- using a digital compression type descriptor "for output so as to indicate the type of compression format of the encoded data block";
- "the data storage and retrieval accelerator method and system [being] employed in a disk storage adapter to reduce the time required to store and retrieve data from computer to a disk memory device"; and
- "the data storage and retrieval accelerator method and system [being] employed in conjunction with random access memory to reduce the time required to store and retrieve data from random access memory."

Appx309 at 3:25–33; Appx313–314 at 12:40–13:18; Appx89 at 3:25–33; Appx93 at 12:14–59.

Figure 8 illustrates one preferred embodiment of a compression system utilizing, *inter alia*, a plurality of encoders:

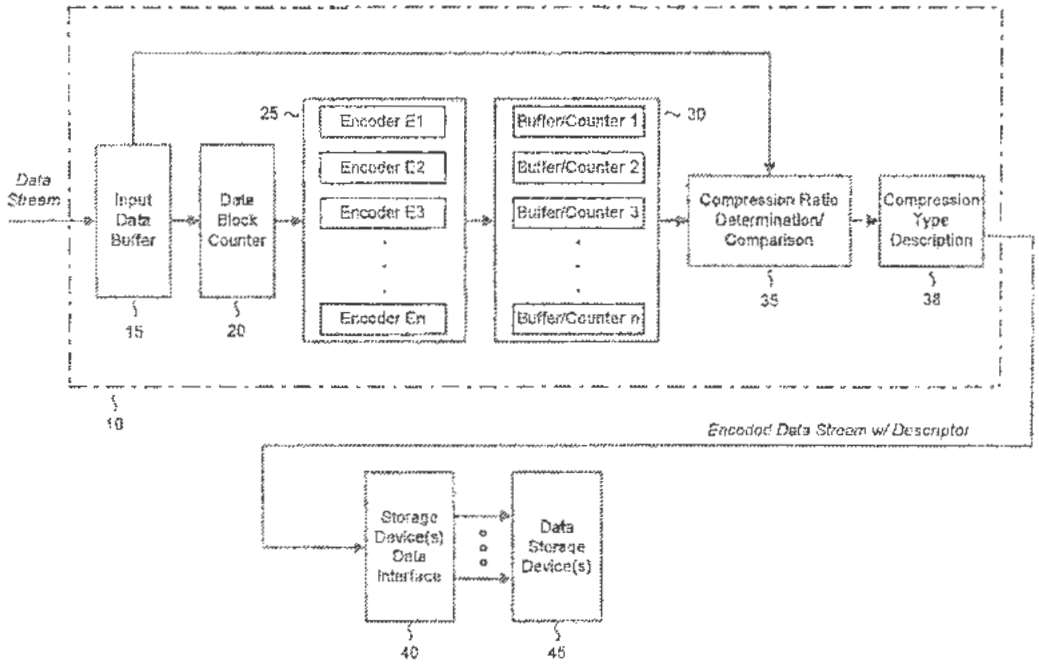


FIGURE 8

Appx79; Appx299.

As explained in the patents, in a preferred embodiment, "the encoding techniques are selected based upon their ability to effectively encode different types of input data." Appx313 at 12:5–7; Appx93 at 11:46–48. The encoder module comprising the multiple encoders "allows the user to tailor the operation of the data compression system for specific applications." Appx313 at 12:11–21; Appx93 at 11:52–62. Further, the encoders may operate either in parallel "(i.e., simultaneously processing a given input data block by utilizing task multiplexing on a single central processor, via dedicated hardware, by executing on a plurality of processor or dedicated hardware systems, or any combination thereof)" to "enhance encoding speed," or they "may operate sequentially on a given unbuffered or buffered input

data block." Appx313 at 12:21–30, 35–39; Appx93 at 11:62–12:4, 12:9–4. This process "eliminate[s] the complexity and additional processing overhead associated with multiplexing concurrent encoding techniques on a single central processor and/or dedicated hardware, set of central processors and/or dedicated hardware, or any achievable combination." Appx313 at 12:30–35; Appx93 at 12:4–9. A "compression type descriptor" is appended to the encoded data block output "so as to indicate the type of compression format of the encoded data block." Appx313 at 12:40–67; Appx93 at 12:14–41.

There are 30 claims in the '908 patent, and 26 claims in the '530 patent. Asserted claim 1 of the '908 patent discloses:

> 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.

Appx316.

Asserted claim 1 of the '530 patent discloses:

> 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.

Appx96.

3. The ’751 Patent

The ’751 patent, entitled “Data Feed Acceleration,” is directed to systems and methods for providing accelerated transmission of digital data over a communication channel using data compression and decompression to effectively increase the bandwidth of the communication channel and/or reduce the latency of data transmission. Appx319 at Abstract; Appx368 at 1:25–36; Appx370 at 5:33–43, 6:13–19. The ’751 patent addressed specific problems with conventional data transmission systems, explaining that “current methods of encryption and compression take as much or substantially more time than the actual time to transmit the uncompressed, unencrypted data.” Appx369 at 3:31–33. Thus, a “problem within the current art is the latency induced by the act of encryption, compression,

decryption, and decompression." *Id.* at 3:34–36. The patent discusses additional problems and limitations in conventional data compression systems, including "high latency and poor compression due to the use of generic data compression algorithms," "substantial latency caused by aggregating data packets due to poor data compression efficiency and packet overhead," "the need for data redundancy," which "add[s] cost and complexity, while also increasing latency and inherent data error rates," capacity limitations of data transmission using existing T1 lines and associated costs, and "[t]he limitation of highly significant bandwidth and/or long delays with co-location processing and long latency times." Appx368–370 at 1:40–5:22.

The '751 patent solved these and other technological problems and limitations in the prior art by providing novel technological solutions in digital data transmission, allowing for, among other things, "secure transmission and transparent multiplication of communication bandwidth," and a reduction in the "latency associated with data transmission of conventional systems." Appx370 at 5:28–29, 6:13–19. "The effective increase in bandwidth and reduction of latency of the communication channel is achieved by virtue of the faster than real-time, real-time, near real-time, compression of a received data stream prior to transmission." *Id.* at 6:36–40. The claimed invention achieves this by, for example, recognizing a characteristic, attribute, or parameter of the data to select a compression encoder,

and using a state machine to provide compressed data. *See, e.g.*, Appx380 at claim 25.

Advantages of the claimed invention include "a consistent reduction in latency" where "[t]he data compression ratio is substantial and repeatable on each data packet," and "no packet-to-packet data dependency," i.e., "packet independence." Appx371 at 7:52–8:3.

Figure 5 of the '751 patent is illustrative of one preferred embodiment depicting a content-independent data compression system:

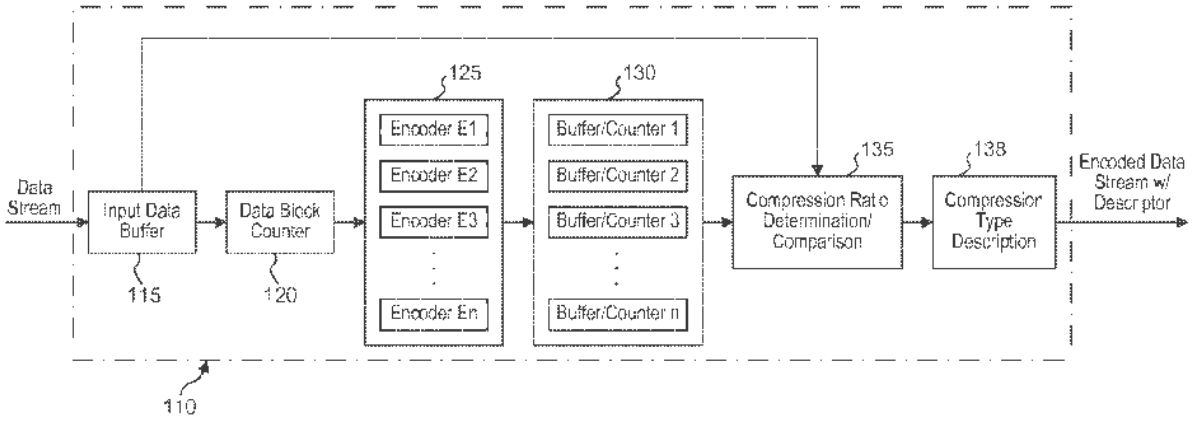


FIG. 5

Appx366; *see also* Appx375 at 15:1–16:67.

There are 48 claims in the '751 patent. Asserted claim 25 discloses:

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.

Appx380.

B. Prior § 101 Rulings Upholding the Patentability of Realtime's Patents

1. The *Carbonite* Ruling

On February 27, 2017, Realtime filed a complaint against Carbonite, Inc. and EVault, Inc. in the Eastern District of Texas, Case No. 6:17-cv-00121-RWS-JDL ("*Carbonite*"), alleging infringement of the '728, '530, and '908 patents, in addition to U.S. Patent No. 8,717,204 ("'204 patent"), which is in the same family as the '751 patent. The Carbonite defendants filed a Rule 12(b)(6) motion to dismiss arguing that all of the asserted patents are invalid under § 101.

On September 20, 2017, Magistrate Judge John Love issued a detailed, 22-page report and recommendation finding that all of the asserted patents are *not* abstract and thus are patent-eligible under § 101. More specifically, Judge Love found that "[t]he '728 Patent is directed to patent eligible subject matter because it discloses a specific improvement in computer capabilities: a system for an improved data compression technique." Appx782. Judge Love's report and recommendation further notes that the '728 patent improves known issues in lossless data compression techniques by "applying a plurality of compression techniques on an input data stream so as to achieve maximum compression in accordance with the real-time or pseudo real-time data rate constraints." Appx783. Judge Love expressly rejected the defendants' reliance on *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322 (Fed. Cir. 2017), finding that "claim 1 of the '728 Patent is not simply encoding and decoding. Rather, it 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. '728 Patent at 5:03–07. This results in real-time or pseudo-real-time compression." Appx785.

Still further, Judge Love found that "[e]ven if claim 1 of the '728 Patent is directed to an abstract idea, the claim, read as a whole, covers an "inventive concept"

because "it utilizes a system and its structural elements in a way that is a solution to a computing problem." Appx785, Appx786.

Regarding the '908 and '530 patents, Judge Love found that the claims are not abstract because "they utilize a system that improves computerized data compression through data storage and retrieval and bandwidth 'utilizing lossless data compression and decompression.'" Appx788–789. Judge Love further found that, "[s]imilar to the '728 Patent, these claims as a whole show a non-abstract idea despite disclosing generic, conventional computing elements." Appx790. "The claims pair a data accelerator with a memory device, and then places a data stream with a proper technique that compresses the data stream and puts the stream into storage more efficiently." *Id.* As noted by Judge Love, "this goes beyond the abstract patents in [*RecogniCorp*]," as Realtime's patents "improve a technological process by pairing data blocks with specific techniques to achieve "an effective increase of [] data storage and retrieval bandwidth of a memory storage device." *Id.*

As with the '728 patent, Judge Love further found that "[e]ven if the ['530 and '908 patent] claims were abstract, they produce an inventive concept," explaining: "Despite some of the well-known elements and techniques, the '530 and '908 Patents create an unconventional solution that results in faster disk access and bandwidth limitations by using a memory device and a data accelerator to compresses the data stream using different compression techniques utilizing lossless

data compression and decompression. . . . The claims create a specific combination of compressing a data stream that results in an inventive concept for data compression." Appx792.

Regarding the '204 patent, which is in the same family as the '751 patent, Judge Love found that the invention is "aimed at providing accelerated transmission of data in a communication channel using data compression and decompression to provide data feeds, transfers, and communications and effectively increase the bandwidth of the communication channel and/or reduce the latency of data transmission." Appx793. Judge Love further found that the '204 patent "offers more than a generic use of data transmission; it provides specific steps of analyzing information and compressing data using specific encoders related to recognized parameters within the data," and therefore is "not abstract." Appx795. And, similar to the other asserted patents, the '204 patent provides inventive concept because it "uses a specific method with various steps to provide faster transmission of data." Appx796. In rejecting the defendants' arguments that the claims rely on generic computer components, Judge Love found that "[a]lthough the claim may use some known technology, the system as a whole creates an unconventional solution because it utilizes 'data compression and decompression to provide data transfer. . . [and] reduce the latency of data transmission." *Id.*

Before the District Judge had a chance to rule on the Carbonite defendants' objections to the report and recommendation, the case was transferred to the District of Massachusetts. On March 7, 2018, Massachusetts District Court entered an order adopting Judge Love's report and recommendation in full "[a]fter careful consideration." Appx817. The motion to dismiss was denied. *Id.*

2. The *Actian* Ruling

The eligibility of Realtime's patents under § 101 came under scrutiny once again in another case in the Eastern District of Texas, No. 6:15-cv-00463-RWS-JDL ("*Actian*"), and were again confirmed to be patent eligible and not abstract. On May 1, 2018, Magistrate Judge Love issued a report and recommendation recommending denial of the defendants' Rule 12(b)(6) motion to dismiss regarding the '908 and '530 patents, as well as U.S. Patent Nos. 7,378,992 ("'992 patent"), 8,643,513 ("'513 patent"), and 6,597,812 ("'812 patent"). Appx799. The '992 and '513 patents are in the same family as, and share a specification with, the '728 and '203 patents.

In the report and recommendation, Judge Love found that "an assessment of the claims at issue—by a careful reading of the claims themselves—does not clearly reveal that the patents are abstract," thereby precluding dismissal at the pleading stage. Appx809.

District Judge Robert Schroeder adopted the Magistrate's report and recommendation in full, acknowledging that the patents themselves state that they

are directed to problems unique to the realm of digital data, a form of data not easily "recognizable to humans." Appx813. The District Judge further found that under Realtime's proposed constructions, the patents "provide technological solutions to problems arising specifically in the realm of computer technology," and therefore "Defendants' argument that the patents are directed to an abstract idea would fail." *Id.* In particular, the District Judge found that if the claim construction proceedings confirmed that the claimed inventions are directed to methods and systems for the compression of digital data—which they unquestionably are—then the claims would indeed be patent-eligible. *Id.*

C. The Delaware District Court's Erroneous § 101 Ruling

On November 10, 2017, Realtime filed a patent infringement complaint in the District of Delaware against Defendant-Appellee Fortinet, Inc. ("Fortinet") regarding the '728, '203, '908, and '751 patents. Appx1538. On February 20, 2018, Fortinet filed a Rule 12(b)(6) motion to dismiss for failure to state a claim, arguing that the asserted patents are invalid under § 101. Appx1794.

On November 20, 2017, Realtime filed a patent infringement complaint in the District of Delaware against Defendant-Appellee Reduxio Systems, Inc. ("Reduxio") regarding the '728, '203, '908 and '751 patents. Appx418. On March 27, 2018, Reduxio filed a Rule 12(b)(6) motion dismiss for failure to state a claim, arguing that the asserted patents are invalid under § 101. Appx729.

On August 7, 2018, Realtime filed a patent infringement complaint in the District of Delaware against Defendant-Appellee Panzura, Inc. ("Panzura") regarding the '728, '908, '530, and '751 patents. Appx1240. On February 15, 2019, Fortinet filed a Rule 12(b)(6) motion to dismiss for failure to state a claim, arguing that the asserted patents are invalid under § 101. Appx1511.

On December 28, 2018, Realtime filed a patent infringement complaint against Defendant-Appellee Aryaka Networks, Inc. ("Aryaka") regarding the '728, '908, '530, and '751 patents, which was amended on April 22, 2019. Appx891, Appx394. On May 6, 2019, Aryaka filed a Rule 12(b)(6) motion to dismiss likewise asserting that the patents are invalid under § 101. Appx1167.

On July 19, 2019, the District Court held a joint hearing on the foregoing Defendants-Appellees' motions to dismiss. Appx388, Appx390. Multiple times throughout the hearing, while Realtime's counsel was discussing the patents and the claimed data compression systems, the court inquired as to whether each individual component of the referenced system was "generic" and/or novel.

For example, while discussing the data compression system of claim 25 of the '751 patent (*see* Appx29–32 at 21:23–24:12), the District Court sought confirmation that each individual component in the claimed system, including the server, processors, and state machine, are "generic" and not novel:

[Realtime's counsel] MR. LEDAHL: So the claim is, the claim is to a system for compressing data.

THE COURT: Okay.

MR. LEDAHL: You've got a server.

THE COURT: I have a server. You agree that's a generic computer component. Right?

MR. LEDAHL: Yes, Your Honor, I would agree the server is a generic computer component and I'm going to anticipate a little bit. As we know from a lot of Federal Circuit cases, the combination of components in a new way is an invention whether they're generic components or not. Basically, that's every invention. It's very rare that people invent new elements, new . . . components altogether.

THE COURT: Let's keep going. We start with a data server.

MR. LEDAHL: That server is implemented on processors.

THE COURT: Which are generic computer parts. Right? Agreed?

MR. LEDAHL: Processors are generic computer components, that's correct.

THE COURT: You are not going to tell me it's novel to have a data server implemented on one or more processors, are you?

MR. LEDAHL: Well, Your Honor, what I'm going to say is that it's not an appropriate analysis to question the novelty of a claim based on a single element. And so –

THE COURT: I will give you your chance, but I've got to work through it slowly. . . . **So far we've got a data server, which you agree is a generic computer component, and it's implemented on one or more processors, which you agree are generic computer components, and you agree that the implementation of a data server on one or more processors is not novel**. All right. Now, keep going.

. . .

> THE COURT: So what's the new technology? Are we not in generic compression anymore?
>
> MR. LEDAHL: So part of this is as the claim goes on, we see that analyzing the data itself, not the descriptor of the data, but the data itself to make decisions about how to compress it was not something that was used in the art. It was –
>
> **THE COURT: You are saying nobody ever looked beyond the three-letter tag, the descriptor, and nobody ever looked at the data itself to compress it. Really?**
>
> . . .
>
> MR. LEDAHL: So we've talked a little bit, or perhaps a lot about analyzing the content of the data block. And the next element really goes to what I was mentioning, which is selecting an encoder, a mechanism for the compression based on that analysis, based on the parameter identified, and then obviously, use that to compress the data with that encoder and, in addition, here you're using what is called a state machine as part of that technique. So, in addition—
>
> **THE COURT: You agree that's a generic computer component?**

Appx32–34 at 24:11–26:6; Appx36 at 28:6–15; Appx39 at 31:2–18 (emphases added).

The District Court likewise attempted to parse the claimed system into individual components and functions, and inquired as to whether each of these individual components are directed to an abstract idea. Indeed, the District Court even asked Realtime's counsel to point to specific "words" and elements of the claims that are not abstract and/or inventive and/or novel:

> MR. LEDAHL: And this overall system is configured to analyze the content of a data block to identify a parameter or attribute or value of that block, and that excludes analysis based solely on reading a descriptor.

THE COURT: All right. Let's just stop there. So far is there anything non-abstract about what we just read?

MR. LEDAHL: Yes.

THE COURT: Where? Tell me. . . . And look at the words that we've just read and show me where it's not abstract.

MR. LEDAHL: So you're analyzing that data block in a specific fashion, and by that what I mean is, you are looking at the content of the data block itself, not at a descriptor. So there were lots of prior art systems.

. . .

THE COURT: Okay. So you're analyzing the content of data. Now, you agree, that's an abstract idea, analyzing the content of data. Right?

MR. LEDAHL: If that were all we were looking at by itself, yes.

THE COURT: Okay. All right.

. . .

MR. LEDAHL: . . . You then, having performed the compression as the claim requires, store the compressed data block, and the claim further recites that you do this using a decisional tree that basically causes you to compress and store the data faster than you could have stored it by – in its uncompressed form. And –

THE COURT: Now, that is an abstract idea. Right? You'll agree on that?

MR. LEDAHL: I do not agree that that is an abstract idea. . . .

THE COURT: Comparing, comparing how fast it takes just to do the compression with how fast it would take to make a comparison to other potentially faster compressions and adding up the time is not abstract?

MR. LEDAHL: I'm not sure I agree with the way you've characterized it. So the distinction that the claims draw is, can I do both? Can I compress it and store it faster than I could have just stored it if I didn't bother trying to compress it?

THE COURT: Okay. That's actually an understandable summary. All right. **You're telling me that comparison is not abstract?**

MR. LEDAHL: No, Your Honor, because it's part of the decisional logic that the system has to use in choosing these compression algorithms.

THE COURT: So would you agree decisional logic is abstract?

. . .

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.

. . .

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.**

. . .

THE COURT: Wait. Let's do this. **Let's make a list. So you keep going back to the summary of the overall system. Give me a list of the technical components.** I will write them down. Go ahead.

MR. LEDAHL: So, well, Your Honor, you have an encoder.

THE COURT: All right.

MR. LEDAHL: Some of the claims refer to a data accelerator. Some refer to a series of encoders.

THE COURT: I can't write that fast. I've got number one, technical component or technical solution, an encoder. All right. What's number two?

MR. LEDAHL: The encoder is integrated into the system in such a with a way that it analyzes before compression takes place to determine which compression to use so that it can accelerate the storage of data faster than either using compression alone without that process, or simply storing without using compression at all.

THE COURT: Okay. That is an abstract idea.

Appx34–35 at 26:17–27:16; Appx39–45 at 31:23–37:15 (emphases added).

The District Court also attempted to establish that the patent claims either are abstract or are not inventive based on its conclusion that the technical solutions provided by the patents (e.g., improving the speed of data compression systems) were "obvious" and "common sense":

> MR. LEDAHL: Your Honor, using compression in these ways, it improves the functioning of a computer. That is both required and it is the result of performing these steps. That if you do it this way, the computer works faster. The system works faster. That's essentially what these are about.
>
> THE COURT: I don't think anybody disputes that by looking at the underlying data as opposed to limiting yourself to the descriptor, you could use, make the computer work faster. . . . **I just think it's such an obvious – it's just stating the obvious**.
>
> [Defendants' counsel] MR. MASUR: Particularly to one who had practiced in the art in the prior art period. Yes, Your Honor.
>
> MR. LEDAHL: Well, Your Honor, now what we're talking about is a different question, which is this allegation of obviousness.
>
> THE COURT: I don't mean obviousness in the patent sense. I mean it is obvious like it's common sense.
>
> MR. LEDAHL: It's actually not, Your Honor. Respectfully, that, and I would submit, that's actually a fact question that you can't resolve in summary judgment.
>
> **THE COURT:** So, wait. **Just to be really clear, when I said common sense, what I mean is that it's obvious that it could be the case.** Maybe that's the best way to articulate it. **And so to look at the content of the data as opposed to limiting yourself to the descriptor, that idea that you would look at both is what I think is a common sense notion.**

Appx47–49 at 39:16–41:1 (emphases added).

The District Court did not identify any evidence or authority supporting its conclusion that the claimed inventions are "common sense." The District Court also never heard argument, nor asked questions, about any patent claims other than claim 25 of the '751 patent. Nor did the District Court make any findings as to whether claim 25 of the '751 patent is representative of all of the asserted claims in the five asserted patents.

At the conclusion of oral argument, the District Court announced that it would "not be issuing written opinions," and that the "[t]he [hearing] transcript will serve as my ruling." Appx52 at 44:13–16. The court read its ruling from the bench, declaring that all five asserted patents are invalid under § 101, and granting Defendants' Rule 12(b)(6) motions to dismiss. Appx57 at 49:1–21.

The District Court ruled that all five patents "generally claim systems and methods for digitally storing and transmitting data," and 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 45:5–16. More specifically, the District Court found:

> With respect to the '728 patent, I think a fair description of what it is is choosing a compression method based on the data type.

> With respect to the '203 patent, a fair description of it is choosing a decompression method using a data type.
>
> With respect to the '908 patent, a fair description of it is using two or more compression techniques to compress and store data faster.
>
> And with respect to the '530 patent, it's using two or more compression techniques to compress and store data faster and using a descriptor – plus rather using a descriptor.
>
> For the '751 patent, it's choosing a compression method based on data type and using two or more compression techniques to compress and store data faster.
>
> 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 48:3–25.

The District Court identified *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016), *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014), *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607 (Fed. Cir. 2016), and *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322 (Fed. Cir. 2017) as the decisions supporting its ruling. Appx53–54 at 45:16–46:13. The District Court did not explain, however, how or why any of these cases are applicable. *See id.*

D. The District Court's Denial of Leave to Amend

In response to Realtime's request for leave to amend, made in its opposition briefing as well as at the hearing, the District Court stated that "***my practice has been to ignore [requests for leaving to amend] and just to grant a motion to dismiss***." Appx50 at 52:4–7 (emphasis added).

The District Court then proceeded to deny, without explanation, Realtime's request for leave to amend on the basis that Realtime could appeal the § 101 ruling to the Federal Circuit:

> THE COURT: All right. Okay. I'm going to deny it. I'm not going to give leave to amend. I am going to grant the motion to dismiss and I think you can take your issues up with the Federal Circuit, and if I'm wrong, I'm wrong.

Appx63 at 55:9–13.

Final judgment in favor of Defendants-Appellees Fortinet, Reduxio, Panzura, and Aryaka was entered on July 29, 2019. Appx1–8. Realtime timely filed notices of appeal on the same day. Appx890, Appx1239, Appx1537, Appx1879.

V. SUMMARY OF ARGUMENT

The District Court erred in finding, at the pleading stage and without any written ruling, that all 159 claims of the five asserted patents, across three distinct families, are invalid under § 101.

All five patents are directed to methods and systems for digital data compression and are aimed at solving known problems in conventional data

compression systems. For example, the faces of the ’728 and ’530 patents make clear that they are directed to systems and methods for data compression using a combination of content-independent and content-dependent encoders, and are aimed at solving problems in the prior art relating to, *inter alia*, data dependency. The faces of the ’908 and ’530 patents make clear that they are directed to systems and methods for accelerated data storage and retrieval utilizing lossless data compression and decompression, and are aimed at solving problems in the prior art relating to, *inter alia*, bandwidth limitations. And the face of the ’751 patent makes clear that it is directed to systems and methods for providing accelerated transmission of digital data over a communication channel using data compression and decompression to effectively increase the bandwidth of the communication channel and/or reduce the latency of data transmission. The ’751 patent is aimed at solving problems in the prior art relating to, *inter alia*, latency, data redundancy, increased error rates, and bandwidth limitations.

The claims are directed to specific improvements in computer functionality and thus are not abstract. And even assuming, *arguendo*, that they are abstract, they are nonetheless patent eligible because they require specific, unconventional combinations of specially configured computer elements, including, for example, a plurality of content-dependent and content-independent encoders, a data accelerator, and a state machine configured to perform specific functions.

The District Court's conclusion that the patents are abstract and do not provide inventive concepts is contrary to fact and law. In reaching this conclusion, the District Court applied the wrong analysis in direct contravention of this Court's and Supreme Court precedent. The District Court considered only one claim from one asserted patent, and parsed that claim into individual components to determine whether each component, individually, involves an abstract concept and/or is a "generic computer component." The District Court improperly failed to consider each of the asserted claims as a whole, failed to consider the claims in light of their respective specifications and claimed advances, and, in assessing inventive concept, failed to consider the elements of each claim as an ordered combination.

The District Court also improperly conflated § 101, § 102, and § 103 issues, and improperly resolved disputed issues of fact based on the District Court's factual conclusion, unsupported by any evidence, that certain aspects of the claimed inventions are "obvious," but not "obviousness in the "patent sense"—obviousness "like it's common sense." Appx47–49 at 39:22–41:1.

The District Court also abused its discretion in denying, without explanation, Realtime's request for leave to amend. The District Court failed to provide any legitimate reason for its denial, stating that its "practice has been to ignore [requests for leave to amend] and just to grant a motion to dismiss." Appx60 at 52:4–7.

The District Court's judgment that the asserted patents are invalid under § 101 should be reversed.

VI. STANDARD OF REVIEW

A district court's dismissal for failure to state a claim is reviewed under the law of the regional circuit, which, in this case, is the Third Circuit. *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) (applying Third Circuit law). The Third Circuit reviews dismissals for failure to state a claim under Rule 12(b)(6) *de novo*, and thus this Court should review the District Court's determination of patent eligibility under § 101 *de novo*. *See id.* (citing *Sands v. McCormick*, 502 F.3d 263, 267 (3d Cir. 2007)). Denial of leave to amend is reviewed for abuse of discretion. *Spuck v. Clearfield Cty., Pa.*, 540 F. App'x 73, 74 (3d Cir. 2013).

On a Rule 12(b)(6) motion to dismiss, the allegations in the complaint must be accepted as true and construed in the light most favorable to Realtime. *Alston v. Countrywide Fin. Corp.*, 585 F.3d 753, 758 (3d Cir. 2009). Further, in determining whether the complaint states a claim for relief, "[t]he issue is not whether a plaintiff will ultimately prevail but whether he or she is entitled to offer evidence to support the claims." *Ballentine v. United States*, 486 F.3d 806, 810 (3d Cir. 2007).

While patent eligibility can be determined at the Rule 12(b)(6) stage, "[t]his is true only when there are no factual allegations that, taken as true, prevent resolving

the eligibility question as a matter of law." *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018). "[P]lausible factual allegations may preclude dismissing a case under § 101 where, for example, 'nothing on th[e] record . . . refutes those allegations as a matter of law or justifies dismissal under Rule 12(b)(6).'" *Id.*

VII. ARGUMENT

A. The Legal Standard for Determining Patent Eligibility Under § 101

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. To determine patent eligibility under § 101, courts conduct a two-step analysis as articulated by the Supreme Court in *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). First, the court must determine "(1) whether the claim, as a whole, is 'directed to' patent-ineligible matter—here, an abstract idea—and (2) if so, whether the elements of the claim, considered individually or as an ordered combination 'transform the nature of the claim' into a patent-eligible application." *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1347 (Fed. Cir. 2018).

This Court has emphasized the importance of the first step of the § 101 analysis, explaining that *Alice* "plainly contemplates that the first step of the inquiry is a meaningful one." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed.

Cir. 2016). "The 'directed to' inquiry, therefore, cannot simply ask whether the claims involve a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions involves a law of nature and/or natural phenomenon." *Id.* at 1335. Rather, the "directed to" inquiry requires consideration of the claims "in light of the specification" to determine whether "their character as a whole is directed to excluded subject matter." *Id.*

In determining whether patent claims are directed to an abstract idea, courts must examine the patent's "claimed advance." *Ancora*, 908 F.3d at 1347. "In cases involving software innovations, this inquiry often turns on whether the claims focus on 'the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool.'" *Id.* (citing *Enfish*, 822 F.3d at 1335–36). This Court has repeatedly held claims focused on improvements in computer technology to "pass muster under *Alice* step one," explaining that both hardware and software can make such non-abstract improvements. *Id.*

For example, in *Enfish*, this Court reversed an ineligibility ruling on a database patent, which the district court described as being directed to "storing, organizing, and retrieving memory in a logical table." *Enfish*, 822 F.3d at 1337. This Court held that "describing the claims at such a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the

rule." *Id.* It further criticized the district court's analysis for "downplay[ing] the invention's benefits" disclosed in the specification. *Id.* at 1337–38. Because the claims were "designed to improve the way a computer stores and retrieves data in memory," they were "directed to a specific implementation of a solution to a problem in the software arts" and thus were "not directed to an abstract idea." *Id.* at 1339.

More recently in *Visual Memory LLC v. NVIDIA Corp.*, this Court drew a similar conclusion about claims focused on a specific improvement in computer memory. 867 F.3d 1253, 1262 (Fed. Cir. 2017). The district court had determined that the claims were directed to the abstract concept of categorical data storage. *Id.* at 1257. This Court, however, determined that this was error because the patent was specifically "directed to an improved computer memory system, not to the abstract idea of categorical data storage." *Id.* at 1259. More specifically, as summarized in *Ancora*, the claims in *Visual Memory* were directed to "an 'improved memory system' that configured operational characteristics of a computer's cache memory based on the type of processor connected to the memory system," allowing "the claimed invention to accommodate different types of processors without compromising performance." *Ancora*, 908 F.3d at 1348. This was an improvement in computer functionality and therefore not abstract. *Visual Memory*, 867 F.3d at 1260; *see also Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1303–06 (Fed.

Cir. 2018) (claims to a "behavior-based virus scan" were directed to an improvement in computer security and thus not directed to an abstract idea); *Core Wireless Licensing v. LG Elecs., Inc.*, 880 F.3d 1356, 1362–63 (Fed. Cir. 2018) (claims to a method for making websites easier to navigate on a small-screen device not directed to an abstract idea); *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1007–11 (Fed. Cir. 2018) (claims to "a specific method for navigating through three-dimensional electronic spreadsheets" not directed to an abstract idea).

If the claims are not directed to an abstract idea, then the inquiry ends and the claims are patent eligible under § 101. *Ancora*, 908 F.3d at 1349. But if the claims are directed to an abstract idea, the second step of the *Alice* analysis calls for the court to "consider the elements of each claim both individually and 'as an ordered combination' to determine whether [the claims contain] 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 [abstract idea] itself.'" *Alice*, 134 S. Ct. at 2355.

Inventions that "improve[] an existing technological process" or "solve[] a technological problem in 'conventional industry practice'" are patent eligible. *Id*. at 2358. Furthermore, a defendant *cannot* prevail on this step simply by showing that each individual claim element was "known in the art" or conventional. *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir.

2016). Even where individual elements are conventional technologies, the specific arrangement of conventional technologies can also form the inventive concept. *Id.* at 1350. Indeed, "[t]he genius of invention is often a combination of known elements which in hindsight seems preordained." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351 (Fed. Cir. 2001).

For example, in *BASCOM*, this Court held that claims to a method and system of filtering Internet content using an Internet Service Provider (ISP) server were a "technical improvement over the prior art ways of filtering such content." 827 F.3d at 1341, 1350, 1352. In holding the claimed invention eligible under *Alice* step two, the Court reasoned that although "[f]iltering content on the Internet was already a known concept, . . . the patent describes how its particular arrangement of elements is a technical improvement over the prior art ways of filtering such content." *Id.* at 1349–50.

B. The District Court Erred in Holding that All Five Asserted Patents Across Three Distinct Patent Families Are Directed to An Abstract Idea Under *Alice* Step One

1. The District Court improperly parsed the claims into individual components to determine whether those components are abstract and failed to consider the claims as a whole

In one fell swoop, at the pleading stage and without any written ruling, the District Court invalidated five patents across three distinct patent families, comprising 159 patent claims, because they are purportedly directed to an abstract

idea. In so doing, the District Court applied the wrong legal standard, improperly parsing the claims into individual components and stripping out critical claim limitations.

This Court has repeatedly cautioned that district courts "'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016). As set forth above, the "directed to" inquiry under *Alice* step one requires courts to consider the claims "as a whole" and "in light of the specification." *Enfish*, 822 F.3d at 1334–35. Courts "cannot simply ask whether the claims involve a patent-ineligible concept," *id.*—but that is precisely what the District Court did here.

Several times throughout the hearing on Defendants-Appellees' motions to dismiss, the District Court interrupted counsel's discussion of the claimed system to obtain admissions that each individual component of the claim is abstract. *See, e.g.*, Appx34–35 at 26:17–27:16; Appx39–45 at 31:23–37:15. Indeed, the District Court admonished Realtime's counsel for talking about the "overall system," and expressly requested that counsel "break [] down" the claims and provide a "list" of components that are not abstract. Appx43 at 35:6–22; Appx44 at 36:22–25. This is the complete opposite of the correct analysis under step one, which inquires whether the claims *as a whole* are directed to an abstract idea—not merely whether the individual

elements involve abstract ideas. "[T]he [Supreme] Court has made clear that it is inappropriate to determine the patent-eligibility of a claim as a whole based on whether selected limitations constitute patent-eligible subject matter." *In re Bilski*, 545 F.3d 943, 958 (Fed. Cir. 2008). The District Court's erroneous analysis requires reversal.

And regardless, as set forth below, the District Court's conclusions as to what the patents are directed to are wrong. *See* Appx56 at 48:3–18. The District Court improperly stripped out critical claim limitations and oversimplified the claims, and failed to acknowledge, much less consider, the patents' claimed advances.

2. It is clear from the faces of the asserted patents that they are directed to improved, particularized methods of digital data compression, and thus the District Court erred in concluding that they are directed an abstract idea

Under a proper analysis of the asserted patent claims (i.e., considered as a whole and in light of their respective specifications), it is clear that they are directed to specific improvements in computer functionality and thus are not abstract. More specifically, the patents provide improved, particularized methods of digital data compression, which this Court has expressly recognized as precisely the type of claim that is patent eligible under § 101. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 (Fed. Cir. 2014) (recognizing that an improved method of "digital data compression" is not abstract).

For example, the faces of the '728 and '203 patents themselves make clear that they are directed to systems and methods for data compression using a combination of content-independent and content-dependent data compression and decompression. *See, e.g.*, Appx180 at Abstract; Appx244 at 1:34–37; Appx245 at 3:59–62; Appx246 at 6:24–27; Appx102 at Abstract; Appx165 at 1:31–34; Appx166 at 3:55–58; Appx167 at 6:18–21. The '728 and '203 patents discuss certain "[f]undamental limitations" associated with conventional data compression techniques, including, *inter alia*, their "content sensitive behavior," i.e., "data dependency," 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." *See, e.g.*, Appx244–245 at 2:29–3:19; Appx165–166 at 2:26–3:15.

The '728 and '203 patents solved these problems found in conventional compression technology by providing systems utilizing two digital-data compression techniques (e.g., content-dependent and content-independent) to compress and decompress data blocks based on analysis of the specific content of the data. The patents overcame the issues associated with relying solely on a descriptor (e.g., file extensions such as ".doc," ".txt," etc.) by requiring a direct examination of the digital-data payload rather than examining just the descriptor. *See, e.g.*, Appx251–253 at 15:60–20:47; Appx256 at claim 1; Appx172–174 at 15:53–20:38; Appx178 at claim 14.

Likewise, the faces of the ’908 and ’530 patents make clear that they are directed to systems and methods for accelerated data storage and retrieval utilizing lossless data compression and decompression, and thus are not directed to abstract ideas. *See* Appx258 at Abstract; Appx308 at 1:15–18; Appx308 at 2:58–60; Appx309 at 4:42–44; Appx64 at Abstract; Appx88 at 1:15–18; Appx88 at 2:58–60; Appx89 at 4:42–44. The ’530 and ’908 patents addressed problems in the current art relating to digital data compression, including, *inter alia*, problems relating to bandwidth limitations. *See, e.g.*, Appx308 at 2:34–51; Appx88 at 2:34–51. The ’908 and ’530 patents solved these problems found in conventional digital data compression by providing novel technological solutions utilizing a plurality of encoders, and optionally a compression descriptor, for accelerated storage and retrieval of data blocks. Appx309 at 3:25–33; Appx313–314 at 12:40–13:18; Appx316 at claim 1; Appx89 at 3:25–33; Appx93 at 12:14–59; Appx96 at claim 1.

And finally, it is clear from the face of the ’751 patent that it is directed to systems and methods for providing accelerated transmission of digital data over a communication channel using data compression and decompression to effectively increase the bandwidth of the communication channel and/or reduce the latency of data transmission. Appx319 at Abstract; Appx368 at 1:25–36; Appx370 at 5:33–43; Appx370 at 6:13–19. The ’751 patent addressed specific problems found in conventional data transmission systems, including those relating to latency,

increased error rates, and bandwidth limitations. Appx368–370 at 1:40–5:22. The '751 patent solved these and other technological problems and limitations in conventional digital data compression by utilizing a state machine to compress data blocks based on an analysis of the specific content of the data being encoded. *See, e.g.*, Appx370 at 5:28–6:40; Appx371 at 7:52–8:3; Appx380 at claim 25.

The claims thus present precisely the type of invention that this Court recognizes as unquestionably patent eligible—particularized systems and methods of digital data compression. *See DDR Holdings*, 773 F.3d at 1259. Contrary to the District Court's oversimplification of the claims, each of the claims at issue are directed to improvements in the functionality of computer systems, which this Court has repeatedly held to be not abstract. This Court's analysis and holding in *Visual Memory* is particularly salient here. In that case, this Court rejected the district court's conclusion that the claims were directed to abstract concept of categorical data storage, and found that they were instead "directed to an improved computer memory system," which is not abstract. *Visual Memory*, 867 F.3d at 1259. Indeed, directly analogous to Realtime's patent claims, the claims in *Visual Memory*, which recited "memory" and a "processor" with "operational characteristics" which "determines a type of data," were directed to "an 'improved memory system' that configured operational characteristics of a computer's cache memory *based on the type of processor* connected to the memory system," allowing "the claimed invention

to accommodate different types of processors without compromising performance." *Ancora*, 908 F.3d at 1348 (summarizing *Visual Memory*, emphasis added). This Court correctly concluded that this type of improvement in computer functionality is not abstract. *Visual Memory*, 867 F.3d at 1260

Notably, multiple judges in four separate rulings from two different districts, after *properly* applying Supreme Court and Federal Circuit precedents, have held that the very same patents asserted here, and related patents, are § 101 eligible. For instance, Magistrate Judge Love in the Eastern District of Texas found that the '728, '530, '908 patents, in addition to the '204 patent, which is in the same family as and shares a specification with the '751 patent, are directed to improvements in digital data compression systems and thus are not abstract. Appx776–797. The case was subsequently transferred, and Judge Love's findings were adopted in full "after careful consideration" by the District of Massachusetts. Appx817.

In another decision involving the '908 and '530 patents, as well as patents in the same family and with the same specifications as the '728 and '203 patents, the court found that the patents are not facially abstract. Appx799–815. The court further found that under Realtime's proposed constructions, the patents "provide technological solutions to problems arising specifically in the realm of computer technology," and any argument that they are "directed to an abstract idea would fail."

Appx813. Thus, dismissal at the pleading stage, before claim construction, was inappropriate. Appx815.

Here, however, the Delaware District Court did not even acknowledge, much less distinguish, these prior rulings. Indeed, the District Court did not issue a written ruling at all. The District Court also had previously requested letter briefs from the parties identifying the Supreme Court or Federal Circuit case "most similar to the challenged claim(s)," but did not even address in its ruling the *Visual Memory* case identified by Realtime. *See* Appx1535. Instead, the District Court proceeded to apply the wrong analysis, without any discussion or acknowledgement of the expressly disclosed problems in the prior art and the patents' claimed advances, and summarily ruled that the patents are directed to abstract ideas. And while the District Court appeared to acknowledge that the patents are directed to methods and systems for data compression, the District Court nonetheless found that they are abstract. *See* Appx56 at 48:3–18. The District Court's ruling is contrary to fact and law and should be reversed.

C. The District Court Erred in Holding that the Five Asserted Patents Do Not Provide Inventive Concepts Under *Alice* Step Two

1. The District Court improperly failed to consider the claims as an ordered combination, conflated the issues of novelty, obviousness, and inventive concept, and improperly resolved questions of fact based on its erroneous and unsupported factual conclusion regarding purported obviousness

Similar to its erroneous step one analysis, at every turn the District Court—again focusing on only one claim from one asserted patent (claim 25 of the '751 patent)—sought to parse the claim into individual components and obtain admissions that each component, individually, is a "generic computer component." *See, e.g.*, Appx32–34 at 24:11–26:6; Appx39 at 31:2–18 (seeking admissions that servers, processors, and state machines are each generic computer components). The District Court's analysis flies in the face of longstanding Supreme Court and Federal Circuit precedent mandating that the elements of the claim must be considered "both individually *and 'as an ordered combination.'" Alice*, 134 S. Ct. at 2355 (emphasis added); *see also Ancora*, 908 F.3d at 1347. Indeed, this Court has expressly held that defendants *cannot* prevail on this step simply by showing that each individual claim element was "known in the art" or conventional—which is exactly what the District Court did here. *See BASCOM*, 827 F.3d at 1349.

The District Court also improperly conflated the issues of novelty and obviousness with its analysis of whether the claims provide inventive concept. *See, e.g.*, Appx33 at 25:10–12 ("THE COURT: You are not going to tell me it's novel to

have a data server implemented on one or more processors, are you?"); Appx34 at 26:1–5, 11–13 ("[Y]ou agree that the implementation of a data server on one or more processors is not novel."). But as held by the Supreme Court, "[t]he 'novelty' of any element or steps in a process, or even of the process itself, is of ***no relevance*** in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter." *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) (emphasis added). While "it may later be determined that the [claimed] process is not deserving of patent protection because it fails to satisfy the statutory conditions of novelty under § 102 or nonobviousness under § 103[,] [a] rejection on either of these grounds does not affect the determination that [the] claims recited subject matter which was eligible for patent protection under § 101." *Id.* at 191; *see also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) ("The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novelty.").

Even worse, the District Court compounded its error by injecting its own opinions, with no supporting evidence, that certain aspects of the claimed invention are "obvious" and "common sense." *See, e.g.*, Appx47–49 at 39:16–41:1 (characterizing the inventions as "stating the obvious"). The District Court's attempt to distinguish between "obviousness in the patent sense," and "obvious[ness] like it's common sense" (Appx48–49 at 40:7–41:1) only further obfuscated the issues,

and demonstrates the District Court's failure to apply this Court's standard for determining eligibility under § 101. Whether a particular element of a claim is obvious, in the "patent sense" or as a "common sense notion," is irrelevant to the § 101 analysis. *Diehr*, 450 U.S. at 188–89, 191. Indeed, "[t]he genius of invention is often a combination of known elements which in hindsight seems preordained." *McGinley*, 262 F.3d at 1351.

Further, even ignoring that the District Court's opinions regarding obviousness—in either sense of the word—are wrong, the District Court's reliance on such incorrect and improper factual determinations constitutes legal error. As recently confirmed by this Court, "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368–69 (Fed. Cir. 2018). This Court further explained that "[w]hether a particular technology is well-understood, routine, and conventional goes beyond what was simply known in the prior art," and "[t]he mere fact that something is disclosed in a piece of prior art . . . does not mean it was well-understood, routine, and conventional." *Id.* at 1369 (holding that the improvements cited in the specification created a "factual dispute" precluding summary judgment); *see also Aatrix Software*, 882 F.3d at 1125–26 (holding that plaintiff's allegations "at a minimum raised factual disputes underlying the § 101 analysis, such as whether the

claim term 'data file' constitutes an inventive concept, alone or in combination with other elements," and reversing Rule 12(b)(6) dismissal).

In sum, the District Court's failure to consider the elements of each asserted claim as an ordered combination, erroneous conflation of § 101, § 102 and § 103 issues, and improper injection of its irrelevant and unsupported factual determinations to resolve a disputed issue of fact at the pleading stage, requires reversal.

And regardless, as discussed further below, the District Court's conclusion that the patents lack inventive concept is wrong. It is clear from the faces of the patents that they provide unconventional technological solutions to technological problems in the field of digital data compression, which are patent eligible.

2. Contrary to the District Court's ruling, the asserted patents provide unconventional solutions to known problems in digital data compression and therefore provide inventive concept

As expressly set forth in the patents themselves, the disclosed inventions provide improvements in digital data compression systems that addressed known problems in conventional prior art systems. 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." Appx244–245 at 2:7–3:55; Appx165–166 at 2:4–3:51. To solve these technological issues, the '728 and '203 patent claims require specific, unconventional combinations of specially configured computer elements. For example, claim 1 of the '728 patent requires (a) "content dependent data compression encoders"; (b) a different "single data compression encoder"; and (c) and a processor configured to (i) "analyze data within a data block to identify one or more parameters or attributes of the data," where the "analyzing . . . excludes analyzing based solely on a descriptor"; (ii) "perform content dependent data compression . . . if the one or more parameters or attributes of the data are identified," and (iii) otherwise "perform data compression with the single data compression encoder." Appx256. The '203 patent likewise claims an unconventional combination of computer elements in context of decompressing digital data. *See, e.g.*, Appx178 at claim 14.

The '908 and '530 patents addressed problems in conventional digital data compression systems, including that "high performance disk interface standards . . . offer only the promise of higher data transfer rates through intermediate data buffering in random access memory," "[f]aster disk access data rates are only achieved by the high cost solution of simultaneously accessing multiple disk drives with a technique known within the art as data striping," and "problems with

bandwidth limitations . . . by all other forms of sequential, pseudorandom, and random access mass storage devices." Appx308 at 2:20–54; Appx88 at 2:19–53. To solve these technological issues, '908 and '530 claims require specific, unconventional combinations of specially configured computer elements. For example, claim 1 of the '908 patent requires (a) "a memory device"; and (b) "a data accelerator" configured to utilize two different data compression techniques to provide a first and second compressed data block, which data blocks are stored on the memory device, and where 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." Appx316. The claimed data accelerator is 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. *Id.* Claim 1 of the '530 patent additionally requires that "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." Appx96.

And finally, the '751 patent addressed specific problems in the prior art data compression systems, including "latency induced by the act of encryption, compression, decryption, and decompression," "substantial latency caused by aggregating data packets due to poor data compression efficiency and packet

overhead," capacity limitations of data transmission using existing T1 lines and associated costs, and "[t]he limitation of highly significant bandwidth and/or long delays with co-location processing and long latency times." Appx368–370 at 1:40–5:22. The '751 patent solved these technological problems by providing an unconventional compression system allowing for a multiplication of bandwidth and a reduction in transmission latency. Appx370 at 5:28–29. For example, claim 25 of the '751 patent discloses a "system for compressing data" requiring a specific and unconventional combination of specially configured computer elements, including "a data server implemented on one or more processors and one or more memory systems and configured to" (a) "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," (b) "select an encoder associated with the identified parameter, attribute, or value," (c) "compress data in the data block with the selected encoder to produce a compressed data block, wherein the compression utilizes a state machine," and (d) "store the compressed data block." Appx380. Claim 25 further requires that "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." *Id.*

Thus, even assuming that the patents are directed to an abstract idea—which they clearly are not—it is clear that each patent claim "amounts to significantly more

than a patent upon the [abstract idea] itself." *Alice*, 134 S. Ct. at 2355. The disclosed inventions solve technological problems in conventional data compression systems, and thus are patent eligible. *Id*. at 2358. While it may be true that data compression, generally, was already a known concept, the patents describe how their "particular arrangement of elements is a technical improvement over the prior art." *BASCOM*, 827 F.3d at 1350.

Contrary to the District Court's ruling, the mere fact that the claims utilize generic computer components does not render them ineligible. This Court has repeatedly rejected the notion that the disclosure of conventional computing elements "dooms the claims." *Enfish*, 822 F.3d at 1338; *see also Visual Memory*, 867 F.3d at 1262 (a "patent's use of conventional computer components" not "fatal to patent eligibility"). Where, as here, the claims do not simply "add general-purpose computer components to a fundamental economic practice or mathematical equation," but rather are directed to specific improvement in computer functionality, they are not abstract. *Enfish*, 822 F.3d at 1338–39.

Properly analyzing the claims as a whole, in light of the statements made in the specification—which must be accepted as true and construed in favor of Realtime—and considering the recited components as an ordered combination, it is clear that the claims recite specific, discrete implementations of digital data compression, and the recited claim elements "operate in an unconventional manner

to achieve an improvement in computer functionality." *See Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300–01 (Fed. Cir. 2016). And in any event, the claimed components are not generic. For example, the processor recited in claim 1 of the '728 patent must be specially configured to perform the recited, non-conventional functions, including analyzing the data to identify one or more parameters or attributes and performing compression with a plurality of different encoders based on that analysis.

To the extent that the District Court's ruling was based on a finding that the claims merely describe desired results, this finding is wrong for the same reasons. The only way to reach such a conclusion would be to ignore the specific requirements of the claims, which is improper. *See McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) ("Courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claim."); *Visual Memory*, 867 F.3d at 1257, 1260–61 (upholding patentability of comparable claim and rejecting defendant's argument that the patent does not "describe how to implement the 'programmable operational characteristic' and requires someone else to supply the innovative programming effort"); *Finjan*, 879 F.3d at 1305 (holding claims recited more than a mere result where they recited "specific steps—generating a security profile that identifies suspicious code and linking it to a downloadable—that

accomplish the desired result").

Indeed, multiple judges from different districts have expressly *rejected* similar arguments that the patents require only conventional computer technology and claim desired results. *See, e.g.*, Appx776–797, Appx817 (ruling that the '728, '530, '908, and '204 (related to the '751) patents are "inventive" and "directed to patent eligible subject matter" because they disclose "specific improvement[s] in computer capabilities" and "specify direct ways to fix issues in data transmission."). As correctly noted by one court, "the patents set out specified rules to lead to [faster compression] and move them past an over-simplified result-oriented patent." Appx791. At the very least, these contrary rulings created factual issues precluding dismissal at the pleading stage.

D. The Cases Referenced by the District Court Are Distinguishable and Do Not Support a Finding of Unpatentability Under § 101

The cases referenced by the District Court at the hearing (*see* Appx53–54 at 45:16–46:13) do not support its decision. First, the District Court referenced *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016), which actually supports Realtime's position that the claims are eligible under § 101. In that case, this Court *upheld* the patentability of claims related to automating part of a preexisting 3–D animation method. *McRO*, 837 F.3d at 1303. The Court expressly cautioned against "oversimplifying the claims," and reiterated that district courts

"must look to the claims as an ordered combination, without ignoring the requirements of the individual steps." *Id.* at 1313. This Court further explained that the proper analysis looks at whether the patent claims "focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *Id.* at 1314. Because the claim at issue "focused on a specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type," it was held to be *not abstract*. *Id.* Likewise, Realtime's claims at issue here are limited to specific methods and systems for digital data compression, which are "specifically designed to achieve an improved technological result in conventional industry practice," and thus are not abstract. *Id.* at 1316.

The other cases cited by the District Court are distinguishable. The patents at issue in *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)—which decision predates *Alice*—related to digital image processing. The "device profile" claims merely claimed "collections of information," and the method claims merely claimed a "process of organizing information . . . not tied to a specific structure or machine." *Id.* at 1350–51. Similarly, the patents *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607 (Fed. Cir. 2016) were related to digital image processing, and per the face of the patent and the patentee's own admission, the claim at issue was merely directed to a method for classifying and storing images.

Id. at 612. The claim was "not directed to a specific improvement to computer functionality," but rather was "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." *Id.* These decisions are clearly inapposite, as Realtime's patents go far beyond simply collecting and organizing information—they involve digital data compression using specific, nonconventional methods (e.g., analysis of the data not based solely on a descriptor), and require specific combinations of computer machinery specially configured to perform specific functions (e.g., encoders, data accelerators, state machines). The patents specifically identify known problems in conventional data compression systems and expressly claim solutions to those problems.

Finally, the claims at issue in *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322 (Fed. Cir. 2017)—the case mostly heavily relied on by the Defendants-Appellees (Appx1526, Appx1865)—also were not directed to improvements in computer functionality, but rather recited methods for creating a composite image using standard encoding and decoding techniques. More specifically, the claimed invention was limited to taking an image on a display, assigning an image code, and reproducing the image based on the codes, which, as the court noted, "does not even require a computer." *Id.* at 1326, 1328. Here, by contrast, the asserted patents are not simply directed to encoding and decoding. Nor do they merely use conventional

computing techniques to achieve an abstract result. Rather, the patents disclose specific improvements to data compression by, for example, using multiple encoders to compress data blocks based on an analysis of the specific content or type of data being encoded, without relying solely on a descriptor such as a file extension. *See, e.g.*, Appx256 at claim 1.

Indeed, in its ruling upholding the patentability of the '728, '530, '908, and '204 patents, the *Carbonite* court expressly rejected the defendants' reliance on *RecogniCorp* to argue that the patents claim "nothing more than unpatentable encoding and decoding," explaining:

> In this case, claim 1 of the '728 Patent is not simply encoding and decoding. It 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. '728 Patent at 5:03–07. This results in real-time or pseudo-real-time compression.

Appx785 (internal case citations omitted); *see also* Appx817.

Though the District Court in this case failed to provide a written ruling and it is thus impossible to discern the court's reasoning in applying the foregoing cases, it is clear that these cases are inapposite and do not support its ruling.

E. The District Court Abused Its Discretion in Denying Realtime's Request for Leave to Amend

The District Court erred in concluding that all five asserted patents are ineligible under § 101. And even assuming its ruling was correct, it independently erred in denying, without explanation, Realtime's request for leave to amend. Had

Realtime been granted leave to amend, it would have added factual allegations to its complaint regarding, for example, the patents' claimed advances and inventive concept. This Court has expressly held that allowing a patentee to file an "amended complaint, which alleges facts directed to the inventive concepts in its claimed invention, would not be futile," and that denying leave to amend under such circumstances constitutes an "abuse of discretion." *Aatrix Software*, 882 F.3d at 1127 (vacating Rule 12(b)(6) dismissal and reversing denial of plaintiff's motion for leave to file a second amended complaint).

Here, the District Court denied Realtime's request for leave to amend not for any legitimate legal reason, but because its "practice has been to ignore [requests for leave to amend] and just to grant a motion to dismiss." Appx60 at 52:4–7. This was an abuse of discretion and requires reversal.

VIII. CONCLUSION

For the foregoing reasons, the District Court's entry of judgment should be reversed, and the asserted patents should be found patent eligible under § 101. In the alternative, this Court should reverse the District Court's denial of Realtime's request for leave to amend and direct the District Court to allow Realtime to file an amended complaint.

Dated: December 6, 2019

/s/ Marc A. Fenster
Marc A. Fenster
mfenster@raklaw.com
Reza Mirzaie
rmirzaie@raklaw.com
Paul A. Kroeger
pkroeger@raklaw.com
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Tel: (310) 826-7474
Fax: (310) 826-6991

Attorneys for Plaintiff-Appellant
Realtime Data LLC

CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitation of Federal Circuit Rule 32(a). This brief contains 13,939 words, excluding the parts of the brief exempted under Federal Rule of Appellate Procedure 32(f) and Federal Circuit Rule 32(b).

This 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: December 6, 2019

/s/ Marc A. Fenster

Marc A. Fenster
mfenster@raklaw.com
Reza Mirzaie
rmirzaie@raklaw.com
Paul A. Kroeger
pkroeger@raklaw.com
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Tel: (310) 826-7474
Fax: (310) 826-6991

Attorneys for Plaintiff-Appellant Realtime Data LLC

CERTIFICATE OF SERVICE

I hereby certify that on December 6, 2019, 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.

DATED: December 6, 2019

Respectfully submitted,

/s/ Marc A. Fenster

Marc A. Fenster
mfenster@raklaw.com
Reza Mirzaie
rmirzaie@raklaw.com
Paul A. Kroeger
pkroeger@raklaw.com
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
Tel: (310) 826-7474
Fax: (310) 826-6991

Attorneys for Plaintiff-Appellant
Realtime Data LLC