IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

Realtime Data LLC, Plaintiff, v. Array Networks Inc., et al., Defendant.	Civil Action No. 17-0800-CFC CONSOLIDATED
Realtime Data LLC, Plaintiff, v. Spectra Logic Corp., Defendant.	Civil Action No. 17-0925-CFC

Stephen B. Brauerman, BAYARD, P.A., Wilmington, Delaware; C. Jay Chung, Christian X. Conkle, Marc A. Fenster, Adam S. Hoffman, Paul A. Kroeger, Reza Mirzaie, Philip X. Wang, RUSS AUGUST & KABAT, Los Angeles, California

Counsel for Plaintiff

Geoffrey Graham Grivner, BUCHANAN INGERSOLL & ROONEY P.C., Wilmington, DE

Counsel for Defendant Array Networks, Inc.

Jack B. Blumenfeld, Brian P. Egan, MORRIS, NICHOLS, ARSHT & TUNNELL LLP, Wilmington, Delaware; Jeffrey J. Lyons, BAKER & HOSTETLER, Wilmington, Delaware

Counsel for Defendant Fortinet, Inc.

Andrew Colin Mayo, ASHBY & GEDDES, Wilmington, Delaware; Guy Yonay, Kyle Auteri, PEARL COHEN ZEDEK LATZER BARATZ LLP, New York, New York

Counsel for Defendant Reduxio Systems, Inc.

Brian P. Egan, MORRIS, NICHOLS, ARSHT & TUNNELL LLP, Wilmington, Delaware; Jeffrey J. Lyons, BAKER & HOSTETLER, Wilmington, Delaware

Counsel for Defendant Panzura

Steven L. Caponi, K&L GATES LLP, Wilmington, Delaware; Elizabeth J. Weiskopf, Nicholas F. Lenning, Theodore J. Angelis, K&L GATES LLP, Seattle, Washington

Counsel for Defendant Quest Software, Inc.

Andrew Colin Mayo, ASHBY & GEDDES, Wilmington, Delaware

Counsel for Defendant CTERA Networks, Ltd.

Kenneth Laurence Dorsney, MORRIS JAMES LLP, Wilmington, Delaware; Joshua M. Masur, ZUBER LAWLER & DEL DUCA LLP, Redwood City, California

Counsel for Defendant Aryaka Networks, Inc.

Robert M. Vrana, YOUNG, CONWAY, STARGATT & TAYLOR LLP, Wilmington, Delaware

Counsel for Defendant Nimbus Data, Inc.

Kelly E. Farnan, Renee Mosley Delcollo, RICHARDS, LAYTON & FINGER, PA, Wilmington, Delaware; Richard G. Frenkel, Lisa K. Nguyen, LATHAM &

WATKINS LLP, Menlo Park, CA; Gabriel K. Bell, LATHAM & WATKINS LLP, Washington, D.C.; Amit Makker, LATHAM & WATKINS LLP, San Francisco, CA

Counsel for Defendant Kaminario, Inc.

David Ellis Moore, Alan Richard Silverstein, Bindu Ann George Palapura, POTTER ANDERSON & CORROON, LLP, Wilmington, Delaware; Katherine R. McMorrow, Manny J. Caixeiro, DENTONS US LLP, Los Angeles, California; Timothy J. Carroll, DENTONS US LLP, Chicago, Illinois; Scott S. Crocker, Steven R. Sprinkle, SPRINKLE LAW GROUP, Austin, Texas

Counsel for Defendant Open Text, Inc.

Robert M. Vrana, YOUNG, CONWAY, STARGATT & TAYLOR LLP, Wilmington, Delaware; Hilary L. Preston, VINSON & ELKINS LLP, New York, New York; Parker D. Hancock, VINSON & ELKINS LLP, Houston, Texas,

Counsel for Defendant MongoDB Inc.

Stephen J. Kraftschik, POLSINELLI PC, Wilmington, Delaware

Counsel for Defendant Buurst, Inc. f/k/a SoftNAS, Inc.

Carl Douglas Neff, FISHERBROYLES, LLP, Wilmington, Delaware; Ryan T. Beard, FISHER BROYLES, Austin, Texas; Christopher R. Kinkade, FISHER BROYLES, Princeton, New Jersey

Counsel for Defendant Egnyte, Inc.

David Ellis Moore, Bindu Ann George Palapura, Stephanie E. O'Bryne, POTTER ANDERSON & CORROON, LLP; Wilmington, Delaware; Robert E. Purcell, THE LAW OFFICE OF ROBERT E. PURCELL, PLLC, Syracuse, New York

Counsel for Defendant Spectra Logic Corp.

MEMORANDUM OPINION

May 4, 2021
Wilmington, Delaware

COLM F. CONNOLLY
UNITED STATES DISTRICT JUDGE

Plaintiff Realtime Data LLC has sued fourteen Defendants for infringement of various combinations of eight patents it holds: U.S. Patent Nos. 7,415,530 (the #530 patent), 8,717,203 (the #203 patent), 8,717,204 (the #204 patent), 8,933,825 (the #825 patent), 9,054,728 (the #728 patent), 9,116,908 (the #908 patent), 9,667,751 (the #751 patent), and 10,019,458 (the #458 patent). The asserted patents are directed to systems and methods involving data compression.

Pending before me are motions to dismiss pursuant to Federal Rule of Civil Procedure 12(b)(6) filed by six Defendants. *Realtime Data LLC v. Fortinet, Inc.*, No. 17-1635, D.I. 11; *Realtime Data LLC v. Spectra Logic Corp.*, No. 17-0925, D.I. 41; *Realtime Data LLC v. Reduxio Systems, Inc.*, No. 17-1676, D.I. 9; *Realtime Data LLC v. Panzura, Inc.*, No. 18-1200, D.I. 21; *Realtime Data LLC v. Aryaka Networks, Inc.*, No. 18-2062, D.I. 15; *Realtime Data LLC v. Kaminario, Inc.*, No. 19-0350, D.I. 23. All six Defendants argue that I should dismiss Realtime Data's complaints because the asserted patents are invalid under 35 U.S.C. § 101 for failing to claim patentable subject matter. Some Defendants argue additional grounds for dismissal, but because I find all the asserted patents invalid on § 101 grounds I do not reach those arguments.

I. BACKGROUND

Realtime alleges that it is a developer of data compression technology and that it maintains an active patent licensing business. *See Fortinet*, No. 17-1635, D.I. 1 ¶ 1. The asserted patents claim variations on a common theme. The patents all relate to methods and systems for compression and decompression of data. Each of the eight patents has one of three shared written descriptions. The #825, #728, and #203 patents share one written description; the #530, #908, and #458 patents share another written description; and the #204 and #751 patents share a third written description.

Kaminario challenges as ineligible the #825 and #458 patents. Kamanario, Fortinet, Reduxio, Panzaura, and Aryaka challenge the #751 patent. Fortinet, Spectra, Reduxio, Panzaura, and Aryaka challenge the #728 and #908 patents. Fortinet and Reduxio challenge the #203 patent. Spectra challenges the #204 patent. And Spectra, Panzura, and Aryaka challenge the #530 patent.

Claim 18 of the #825 recites

> [a] method comprising:
> associating at least one encoder to each one of a plurality of parameters or attributes of data:
> analyzing data within a data block to determine whether a parameter or attribute of the data within the data block is identified for the data block;
> wherein the analyzing of the data within the data block to identify a parameter or attribute of the data excludes analyzing based only on a descriptor that

is indicative of the parameter or attribute of the data within the data block;

identifying a first parameter or attribute of the data of the data block;

compressing, if the first parameter or attribute of the data is the same as one of the plurality of parameter or attributes of the data, the data block with the at least one encoder associated with the one of the plurality of parameters or attributes of the data that is the same as the first parameter or attribute of the data to provide a compressed data block; and

compressing, if the first parameter or attribute of the data is not the same as one of the plurality of parameters or attributes of the data, the data block with a default encoder to provide the compressed data block.

Claim 25 of the #728 patent recites

[a] computer implemented method comprising:

analyzing, using a processor, data within a data block to identify one or more parameters or attributes of the data within the data block;

determining, using the processor, whether to output the data block in a received form or in a compressed form; and

outputting, using the processor, the data block in the received form or the compressed form based on the determination,

wherein the outputting the data block in the compressed form comprises determining whether to compress the data block with content dependent data compression based on the one or more parameters or attributes of the data within the data block or to compress the data block with a single data compression encoder; and

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 only on a

descriptor that is indicative of the one or more parameters or attributes of the data within the data block.

Claim 1 of the #908 patent recites

[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.

Clam 1 of the #530 patent recites

[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.

Claim 9 of the #458 patent recites

[a] method for accelerating data storage comprising:
analyzing a first data block to determine a parameter of the first data block;
applying a first encoder associated with the determined parameter of the first data block to create a first encoded, data block wherein the first encoder utilizes a lossless dictionary compression technique;
analyzing a second data block to determine a parameter of the second data block;
applying a second encoder associated with the determined parameter of the second data block to create a second encoded data block, wherein the second encoder utilizes a lossless compression technique different than the lossless dictionary compression technique; and
storing the first and second encoded data blocks on a memory device, wherein encoding and storage of the first encoded data block occur faster than the first data block is able to be stored on the memory device in unencoded form.

Claim 1 of the #751 patent recites

[a] method for compressing data comprising:
analyzing content of a data block to identify a parameter, attribute, or value of the data block that excludes analyzing based solely on reading a descriptor;
selecting an encoder associated with the identified parameter, attribute, or value;
compressing data in the data block with the selected encoder to produce a compressed data block,

wherein the compressing includes utilizing a state machine; and

storing the compressed data block;

wherein the time of the compressing the data block and the storing the compressed data block is less than the time of storing the data block in uncompressed form.

Claim 12 of the #204 patent recites

[a] method for processing data, the data residing in data fields, comprising:

recognizing any characteristic, attribute, or parameter of the data;

selecting an encoder associated with the recognized characteristic, attribute, or parameter of the data;

compressing the data with the selected encoder utilizing at least one state machine to provide compressed data having a compression ratio of over 4:1; and

point-to-point transmitting the compressed data to a client;

wherein the compressing and the transmitting occur over a period of time which is less than a time to transmit the data in an uncompressed form.

Claim 14 of the #203 patent recites

[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.

In a prior oral ruling on motions to dismiss brought by Aryaka, Panzura, Fortinet, and Reduxio, I found the #728, #908, #530, and #751 patents invalid for claiming ineligible subject matter. *Reduxio*, No. 17-1676, D.I. 46 (oral order). Realtime appealed, and the Federal Circuit vacated my prior ruling as insufficient.

Realtime Data LLC v. Reduxio Sys., Inc., 831 F. App'x 492, 499 (Fed. Cir. 2020). The Federal Circuit cautioned that "[n]othing in [its] opinion should be read as opining on the relative merits of the parties' arguments or the proper resolution of the case." *Id.*

II. LEGAL STANDARDS

A. Legal Standards for Stating a Claim

To state a claim on which relief can be granted, a complaint must contain "a short and plain statement of the claim showing that the pleader is entitled to relief." Fed. R. Civ. P. 8(a)(2). Detailed factual allegations are not required, but the complaint must include more than mere "labels and conclusions" or "a formulaic recitation of the elements of a cause of action." *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 555 (2007) (citation omitted). The complaint must set forth enough facts, accepted as true, to "state a claim to relief that is plausible on its face." *Id.* at 570. A claim is facially plausible "when the plaintiff pleads factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged." *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (citation omitted). Deciding whether a claim is plausible is a "context-specific task that requires the reviewing court to draw on its judicial experience and common sense." *Id.* at 679 (citation omitted).

When assessing the merits of a Rule 12(b)(6) motion to dismiss, a court must accept as true all factual allegations in the complaint and in documents explicitly relied upon in the complaint, and it must view those facts in the light most favorable to the plaintiff. *See Umland v. Planco Fin. Servs.*, 542 F.3d 59, 64 (3d Cir. 2008).

B. Legal Standards for Patent-Eligible Subject Matter

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101.

There are three judicially created limitations on the literal words of § 101. The Supreme Court has long held that laws of nature, natural phenomena, and abstract ideas are not patentable subject matter. *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). These exceptions to patentable subject matter arise from the concern that the monopolization of "these basic tools of scientific and technological work" "might tend to impede innovation more than it would tend to promote it." *Id.* (internal quotation marks and citations omitted). Abstract ideas include mathematical formulas and calculations. *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972).

"[A]n invention is not rendered ineligible for patent [protection] simply because it involves an abstract concept[.]" *Alice*, 573 U.S.. at 217. "[A]pplication[s] of such concepts to a new and useful end . . . remain eligible for patent protection." *Id.* (internal quotation marks and citations omitted). But in order "to transform an unpatentable law of nature [or abstract idea] into a patent-eligible application of such law [or abstract idea], one must do more than simply state the law of nature [or abstract idea] while adding the words 'apply it.'" *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 71 (2012) (emphasis omitted).

In *Alice*, the Supreme Court established a two-step framework by which courts are to distinguish patents that claim eligible subject matter under § 101 from patents that do not claim eligible subject matter under § 101. The court must first determine whether the patent's claims are drawn to a patent-ineligible concept—i.e., are the claims directed to a law of nature, natural phenomenon, or abstract idea? *Alice*, 573 U.S. at 217. If the answer to this question is no, then the patent is not invalid for teaching ineligible subject matter. If the answer to this question is yes, then the court must proceed to step two, where it considers "the elements of each claim both individually and as an ordered combination" to determine if there is an "inventive concept—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a

patent upon the [ineligible concept] itself." *Id.* at 217–18 (alteration in original) (internal quotations and citations omitted).[1]

Issued patents are presumed to be valid, but this presumption is rebuttable. *Microsoft Corp. v. i4i Ltd. Partnership*, 564 U.S. 91, 96 (2011). Subject-matter eligibility is a matter of law, but underlying facts must be shown by clear and convincing evidence. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

III. DISCUSSION

Applying the two-step framework from *Alice*, I find that the asserted patents are invalid under § 101. The Federal Circuit has repeatedly held that manipulation of information is inherently abstract. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("A process that start[s] with data, add[s] an

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[1] The Court in *Alice* literally said that this two-step framework is "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." 573 U.S. at 217. But as a matter of logic, I do not see how the first step of the *Alice/Mayo* framework can distinguish (or even help to distinguish) patents in terms of these two categories (i.e., the categories of (1) "patents that claim laws of nature, natural phenomena, and abstract ideas" and (2) patents "that claim patent-eligible applications of [laws of nature, natural phenomena, and abstract ideas]"). *Both* categories *by definition* claim laws of nature, natural phenomena, and abstract ideas; and only one of *Alice*'s steps (i.e., the second, "inventive concept" step) could distinguish the two categories. I therefore understand *Alice*'s two-step framework to be the framework by which courts are to distinguish patents that claim eligible subject matter under § 101 from patents that do not claim eligible subject matter under § 101.

algorithm, and end[s] with a new form of data [i]s directed to an abstract idea."); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) ("[S]electing certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis . . . is all abstract."); *Elec. Power Grp.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) ("[W]e have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas."). The asserted patents purport to teach the abstract manipulation of data and they lack any additional inventive features. They are thus ineligible for patent protection.

I structure my analysis as follows. I first consider whether it is appropriate to declare the patents invalid at the motion to dismiss stage. I conclude that it is. I then consider each patent individually, beginning with the #825 patent. I apply the two-part *Alice* test and consider whether each patents' claims should be considered together for the purpose of subject-matter eligibility. Because each of the asserted patents are directed to abstract ideas that are the same as or related to those in the #825 patent or another asserted patent, I address subsequent patents by discussing whether any of the limitations they add change the § 101 analysis I have already provided for previously considered patents. In all cases I find that these subsequent patents are directed to substantively similar abstract ideas and add no

inventive features. I conclude by considering arguments Realtime directed to all the asserted patents without distinguishing among the patents.

A. It Is Appropriate to Resolve This Case on a Motion to Dismiss

"[W]hether a claim recites patent eligible subject matter is a question of law [that] may contain underlying facts." *Berkheimer*, 881 F.3d at 1368. But "not every § 101 determination contains genuine disputes over the underlying facts . . . ." *Id.* When there is no dispute of material fact, § 101 arguments may be resolved at the pleading stage. *Id.* The Federal Circuit has "repeatedly affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant discovery has commenced." *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017); *see also SAP Am.*, 898 F.3d at 1166 (citing cases); *Epic IP LLC v. Backblaze, Inc.*, 351 F. Supp. 3d 733, 751–52 (D. Del. 2018) (discussing when it is appropriate to resolve a § 101 motion on the pleadings).

Consideration of the asserted patents' subject-matter eligibility is appropriate at this stage of the case. Realtime argues that there are underlying factual disputes about whether the patents cover new solutions to existing technological problems and that fact discovery is necessary before ruling on the § 101 motions. But the patents themselves explain that the technologies and methods used in the claimed analyses were well-known and routine. *See, e.g.,*

#825 patent at 6:24–31, 7:5–11. And precedent makes clear that the inventive feature in a patent cannot be the abstract idea itself. *See Mayo*, 566 U.S. at 72–73 (explaining the inventive concept must be "significantly more" than the abstract idea itself); *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) ("a claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept").

Realtime also argues that 42 paragraphs in its First Amended Complaint against Kaminario contain relevant factual assertions. *Kaminario*, 19-0350, D.I. 33 at 29 (citing D.I. 18 at ¶¶ 9–14, 16–27, 45–56, 72–83). But the cited paragraphs recite legal conclusions, quotations from the patents, and conclusory allegations that the patents contain inventive features. None of the cited paragraphs identify an inventive feature that is distinct from one of the claimed abstract ideas. Even taking as true all facts as alleged, Realtime has not identified any elements of any claims that amount to "significantly more" than the abstract idea to which the claims are directed. Thus, discovery is not necessary.

Resolving eligibility on the pleadings minimizes "expenditure of time and money by the parties and the court" and "protects the public" from illegitimate patents. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 719 (Fed. Cir. 2014) (Mayer, J., concurring) (citation omitted). Such resolution is appropriate in these cases.

B. The #825 Patent

The #825 patent claims methods for selecting and performing data compression based on the data being compressed.

1. Claim 18 is Representative in the #825 Patent

Kaminario argues that claim 18 is representative. No. 19-0350, D.I. 24 at 4. Realtime's response to this assertion (and Kaminario's other proposed representative claims) is that Kaminario "provides no clear and convincing evidence that ***all*** of the claims of the asserted patents (totaling 100 claims across three different, unrelated patents) are ineligible." D.I. 33 at 35 (emphasis in original). If accepted, this response would effectively make dismissal on § 101 grounds impossible at the pleadings stage. Realtime's only substantive responses are to dismiss Kaminario's arguments as "conclusory attorney argument" and to offer a single sentence footnote listing terms from the patents asserted against Kaminario without any context. D.I. 33 at 36 n. 12. Realtime makes no effort to explain how the listed terms affect the *Alice* inquiry or to meaningfully respond to Kaminario's arguments about why claim 18 is representative. I have reviewed the claims and agree that claim 18 is representative.

Substantially similar claims directed to the same abstract idea can be considered together for subject-matter eligibility. *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1348 (Fed. Cir. 2014).

The #825 patent's independent claims (1, 18, 23, and 28) all recite a common algorithmic procedure with inconsequential variations. Each of the independent claims covers a method where (1) encoders are associated with particular parameters; (2) the presence or absence of those parameters in the data to be compressed, excluding any descriptive metadata, is identified; and (3) the associated encoder is used to compress the data. *See* #825 patent at claims 1, 18, 23, 28. In other words, the data is compressed based on the attributes of the data itself, rather than a descriptor such as ".txt," ".png," ".doc," or ".csv." The independent claims are all directed to various wordings of this same procedure. Claims 23 and 28 add the additional step of providing a token indicative of the compression technique, but this extra algorithmic step does not alter the *Alice* analysis. *See Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1374 & n.9 (Fed. Cir. 2017) (finding claims covering an algorithmic step with "identifying tokens" invalid for lack of patentable-subject matter and explaining that adding a "hash identifier" did not impact the *Alice* test because it did not add the requisite inventive concept).

The dependent claims also do not add any limitations that affect the § 101 analysis. Those claims merely specify additional steps of abstract data analysis or limit the claims to particular operations. "A claim is not patent eligible merely because it applies an abstract idea in a narrow way." *BSG*, 899 F.3d at 1287 & n.1

(dependent claims focused on same abstract idea despite minor differences); *see also buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (explaining that narrowing the use of an abstract idea "to a particular technological environment" does not make a claim directed to an otherwise abstract idea patent eligible).

Several claims recite additional abstract steps for the receiving, storing, or manipulation of information. #825 patent at claims 2, 10, 19, 24, 27. Other claims recite well-known compression methods. #825 patents at claims 12–16. Claims 6, 7, 20, 25, and 29 add the arbitrary condition that compression occur in "real time," and claims 8 and 9 specify whether the data is of variable or fixed size. Claims 3, 21, and 30 add as an additional step the provision of a token identifying the compression technique; and claims 17 and 26 allow the user to disable certain compression methods. The remaining claims combine some of these limitations. #825 patent at claims 4–5, 11, 22. For example, claims 5 and 22 require both the transmission of a token indicating the method of compression and decompression based on that token. If the independent claims are invalid for claiming ineligible subject matter, the dependent claims are also invalid for the same reasons. The dependent claims are directed to the same abstract process and do not add any unconventional or inventive steps. None of the additional limitations alter the § 101 analysis.

Accordingly, I adopt claim 18 as representative of the #825 patent for the purposes of § 101 subject-matter eligibility.

2. *Alice* Step One

The court determines at step one whether the claims at issue are directed to a patent-ineligible concept. *Alice*, 573 U.S. at 217. "[C]laims are considered in their entirety [at step one] to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). In conducting step one, I "look at the focus of the claimed advance over the prior art to determine if the claim's character as a whole is directed to excluded subject matter." *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quotation marks omitted).

"The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citation omitted). The Court has recognized, however, that fundamental economic practices, methods of organizing human activity, and mathematical formulae are abstract ideas. *See Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("fundamental economic practice" of hedging is unpatentable abstract idea); *Alice*, 573 U.S. at 220–21 ("organizing human activity" of intermediated settlement falls "squarely within realm of 'abstract ideas'"); *Gottschalk*, 409 U.S.at 68, 71–72 (mathematical

algorithm to convert binary-coded decimal numerals into pure binary code is unpatentable abstract idea); *Parker v. Flook*, 437 U.S. 584, 594–95 (1978) (mathematical formula for computing "alarm limits" in a catalytic conversion process is unpatentable abstract idea).

To determine whether claims are directed to an abstract idea courts generally "compare the claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334. The Federal Circuit has also instructed district courts to consider as part of *Alice*'s step one whether the 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." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (citing *Enfish*, 822 F.3d at 1336).

Claims directed to the manipulation of data are abstract absent additional features, because, "information as such is an intangible." *Elec. Power*, 830 F.3d at 1353. "[A]nalyzing information by steps people go through in their minds, or by mathematical algorithms, without more" is "within the abstract-idea category." *Id.* at 1354. In other words, "[a] process that start[s] with data, add[s] an algorithm, and end[s] with a new form of data [is] directed to an abstract idea." *RecogniCorp*, 855 F.3d at 1327 (citing *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)).

Because the #825 patent covers a procedure for manipulating information, the Federal Circuit's prior cases considering patents directed to the manipulation of information are directly relevant. Applying these standards, I find that the #825 patent is directed to the abstract idea of compressing data based on the content of that data.

Claim 18 consists entirely of general, abstract steps. The claim requires "associating [an] encoder," "analyzing data," "identifying a [] parameter," and "compressing." The other requirements of the claim are logical conditions that limit the claim's scope and do not change the focus of the claims from the abstract manipulation of information. Illustrating their abstract nature, the claimed steps are captured in a simple flow chart. #825 patent at 6:7–10, figs. 17a. 17b. Claim 18 is directed to precisely the type of abstract information processing that the Federal Circuit has repeatedly found patent ineligible. *See, e.g.*, *RecogniCorp*, 855 F.3d at 1327 (encoding and decoding data is an abstract idea); *In re Bd. of Trustees of Leland Stanford Junior Univ.*, 2021 WL 922727, at *4 (Fed. Cir. Mar. 11, 2021) ("mathematical algorithms for performing calculations, without more, are patent ineligible under § 101"); *iLife Techs., Inc. v. Nintendo of Am., Inc.*, 2021 WL 117027, at *2 (Fed. Cir. Jan. 13, 2021) ("We have routinely held that claims directed to gathering and processing data are directed to an abstract idea."); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed.

Cir. 2017) (claims focused on sending and monitoring information are directed to an abstract idea); *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 612 (Fed. Cir. 2016) (classifying and storing information is abstract); *Digitech Image Techs.*, 758 F.3d at 1351 (method claims for organizing information through mathematical analyses was directed to an abstract idea); *Mortg. Application Techs., LLC v. MeridianLink, Inc.*, 2021 WL 97347, at *4 (Fed. Cir. Jan. 12, 2021) ("information storage and exchange is an abstract idea even when it uses computers as a tool or is limited to a particular technological environment").

The Federal Circuit's decision in *SAP America* confirms this analysis. 889 F.3d 1161. In that case, the claims were focused on "selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis." *Id.* at 1167. The Federal Circuit held that the asserted claims were ineligible because the claimed operations were "all abstract." *Id.* at 1167. The claims in the #825 patent are not materially different from the claims considered in *SAP America*. Indeed, Realtime itself alleges in its complaint against Kaminario that the #825 patent is "directed to systems and methods of digital-data compression utilizing multiple encoders to compress data blocks *based on an analysis of the specific content or type of the data being encoded.*" *Kaminario*, 19-350, D.I. 18 ¶ 74 (emphasis added).

Nothing in the #825 patent's claims goes beyond conducting data analysis and performing mathematical operations. The disclosed analysis could be implemented using pen and paper. Because there is "no particular concrete or tangible form" to the claims, they are abstract. *Ultramercial*, 772 F.3d at 715; *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) ("[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101."). The patent is, in short, focused on an abstract idea for analyzing data.

3. *Alice* Step Two

Having found that the claims are directed to an abstract idea, I next ascertain whether the claims contain an "'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (quoting *Mayo*, 566 U.S. at 77). It is insufficient for the patent to "simply state the law of nature while adding the words 'apply it.'" *Mayo,* 566 U.S. at 72. A claim directed towards an abstract idea must include "'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Alice*, 573 U.S. at 221 (alterations in original) (quoting *Mayo*, 566 U.S. at 77). No such additional features exist here, and I find that, whether considered individually or as an ordered combination, the claim elements of the #825 patent do not "transform" the claimed abstract idea into patent-eligible subject matter.

The patent's claims take the abstract idea of compressing data based on the content of that data and simply apply that idea. Reciting the application of an abstract idea without more does not provide an inventive concept. *See, e.g.*, *Alice*, 573 U.S. at 221 ("transformation into a patent-eligible application requires more than simply stating the abstract idea while adding the words 'apply it'" (alterations, internal citations, and quotation marks omitted)); *BSG*, 899 F.3d at 1290 ("[A] claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention 'significantly more' than that ineligible concept."); *Content Extraction*, 776 F.3d at 1347–48 ("For the role of a computer in a computer-implemented invention to be deemed meaningful in the context of this analysis, it must involve more than performance of well-understood, routine, and conventional activities previously known to the industry." (quotation marks and alterations omitted)).

Realtime argues the #825 patent teaches "specific improvements to the function of [] computer parts themselves," and therefore contains an inventive feature. *Kaminario*, 19-350, D.I. 33 at 9.[2] But this argument is inconsistent with

[2] Realtime argues at both steps of the *Alice* inquiry that the #825 patent is subject-matter eligible because the patent covers technological solutions. Realtime phrases its arguments slightly differently at each step to correspond to the *Alice* test as it has been articulated in Federal Circuit case law. At step one, Realtime argues that the #825 patent is subject-matter eligible because it is "directed to technological solutions" and therefore is not directed to an abstract idea. D.I. 33 at 12 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 (Fed. Cir. 2014) and

the plain language of the patent. The #825 patent's written description explains that all the constituent elements are generic and well-understood in the art. The claimed methods are preferably implemented on "a general purpose computer or any machine or device" with a microprocessor using any of the "many conventional content dependent techniques" for compression, including many that are "currently well known." #825 patent at 2:65–66, 6:26–31, 7:7–11. And these elements are not combined in an inventive way; rather, they are simply combined in the order logic requires. *Two-Way Media*, 874 F.3d at 1339 (claiming the "conventional ordering of steps" to implement an abstract idea on a generic

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Enfish, 822 F.3d at 1339). Its argument at step two is summarized in the main text above. Both arguments are premised on finding that the #825 patent covers technical solutions for improved computer functionality.

The Federal Circuit has at times considered computer functionality at step one of the *Alice* inquiry and at times at step two. *Compare Enfish*, 822 F.3d at 1335 ("Therefore, we find it relevant to ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea, even at the first step of the *Alice* analysis."), *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1315–16 (Fed. Cir. 2019) (considering introduction of computer functionality into claims at step one of *Alice* inquiry), *and TLI Commc'ns*, 823 F.3d at 611–13 (same), *with Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1094 (Fed. Cir. 2019) (considering whether the claims "improve computer functionality" at step two), *Intell. Ventures I LLC v. Symantec*, 838 F.3d 1307, 1320 (Fed. Cir. 2016) (considering whether "the asserted claim improve[s] or change[s] the way a computer functions" at step two), *and BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1351 (Fed. Cir. 2016) (finding that "the claims may be read to improve an existing technological process" at step two (internal quotation marks and alteration omitted)). I have followed the Supreme Court's lead in *Alice* and consider computer functionality at step two.

computer is not inventive); *see also In re TLI Commc'ns*, 823 F.3d at 615 ("vague, functional descriptions" are insufficient to transform an abstract idea into a patent-eligible invention").

Indeed, none of the claims in the #825 patent even require physical components. *See, e.g.*, #825 patent claims 1, 18, 23, 28. The claims recite an "encoder," but "encoder" is simply the patent's name for a mathematical compression algorithm. *See* #825 patent at 7:5–11 (distinguishing between an "encoder module" and "encoders," and explaining that the encoders can be any number of compression algorithms). Since the patent neither requires any hardware nor otherwise teaches any technical improvement to computer technology, it clearly does not provide "technological solutions."

The #825 patent's claims do not contain additional limitations, whether considered individually or as an ordered combination, that "transform" the claimed abstract idea into patent-eligible subject matter. I therefore find the #825 patent invalid for claiming ineligible subject matter.

C. The #728 Patent

The #728 patent is directed to systems and a method that compress data based on the characteristics of the data to be compressed.

1. The #728 Patent Claims are Equivalent for the Purposes of § 101

None of the claims in the #728 patent are materially different from each other for the purposes of § 101. The #728 patent has three independent claims—1, 24, and 25. Though they are drafted slightly differently, they all are directed to the same idea of compressing data based on the characteristics of that data. Claim 25 differs from claim 1 insofar as claim 25 is a method and claim 1 is a system claim. Claim 24 claims essentially the same system as claim 1 but uses a "default data compression encoder" instead of a "single data compression encoder." When the only difference between claims is the form in which they are drafted, it is appropriate to treat them as "as equivalent for purposes of patent eligibility under § 101." *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Can. (U.S.)*, 687 F.3d 1266, 1277 (Fed. Cir. 2012).

The dependent claims, all of which depend from claim 1, add additional steps or criteria that limit the scope of the claims, but they too are directed to the same idea and do not add additional limitations that would alter the *Alice* analysis. For example, claims 2 and 3 indicate whether the data block is transmitted from an internal or external source, and claims 4–6 require that some or all of the data compression happen in real time. Claim 14 requires that the single data compression encoder be "lossy" and claim 15 requires that the compressed data

block be stored.[3] I have reviewed each of the dependent claims and find that if claim 1 is directed to an abstract idea and is implemented on generic hardware, the same is true of every dependent claim. When claims "require performance of the same basic process . . . they should rise or fall together." *Smart Sys.*, 873 F.3d at 1368 n.7. I will therefore not separately analyze the dependent claims.

2. *Alice* Test

The #728 patent is directed to the same idea as the #825 patent—compressing data based on the content of that data. The #728 patent is for all relevant purposes the same as the #825 patent. Both patents are directed to abstract information processing. The fact that most of the #728 patent's claims are written in system form and reference generic processors, does not make the claims less directed to the abstract processing of information. *See In re TLI Commc'ns*, 823 F.3d at 613 ("although the claims limit the abstract idea to a particular environment[,] . . . that does not make the claims any less abstract for the step 1 analysis"). Accordingly, the #728 patent is directed to ineligible subject matter for the same reasons as the #825 patent.

[3] A "lossy" data compression technique is one in which information is lost upon compression, such that the compressed data differs from the original. #530 patent at 1:56–59. A "lossless" compression technique avoids any information loss. #530 patent at 2:4–7.

At step two of the *Alice* test, the #728 patent's claims do not contain any additional features that make them patent eligible. The claims teach nothing beyond the notion of applying the identified abstract idea on generic computer technology. For example, claim 1 of the #728 patent, consists of nothing more than a processor and compression encoders. The encoders are inherently abstract, and the processor is a generic computer component. Claim 1 describes the configuration of the processor, but the configuration simply captures the identified abstract idea for information processing. *Ultramercial*, 772 F.3d at 716 ("[C]onventional steps, specified at a high level of generality, [are] insufficient to supply an inventive concept." (citing *Alice*, at 2357)).

In sum, like the #825 patent's claims, the #728 patent's claims are directed to ineligible subject matter and lack additional features that would make them valid under § 101.

D. The #908 Patent

The #908 patent claims systems and methods for compressing data with two key characteristics. First, the #908 patent teaches compressing a data stream in two separate blocks, with each block being compressed with a different method. Second, the #908 patent requires the logical condition that the combined time of compressing and storing the compressed data be faster than storing the uncompressed data.

1. The #908 Patent Claims are Equivalent for the Purposes of § 101

The #908 patent has four independent claims. Claim 1 is a system claim, and claims 21, 25, and 29 provide three method claims for the process performed by the system in claim 1. Each of the three independent method claims contain only incidental variations on the same process. Claim 21 is simply a rewriting of claim 1 in a different form, claim 25 adds a "receiving" step to claim 21, and claim 29 is written in terms of data retrieval rather than data storage. These differences do not affect the *Alice* analysis. *See Smart Sys.*, 873 F.3d at 1368 n.7 (explaining that when claims "require performance of the same basic process . . . they should rise or fall together.").

The dependent claims of the #908 patent add limitations that are similar to those already discussed for the #825 patent. Claims 2–7, 14, 19, 22–23, and 26–28 add additional informational processing steps, specify conditions for the input or output of data analysis, or impose additional speed conditions. Claims 8–13, 20, and 30 specify either generic hardware or known compression methods. Claim 18 requires that the data blocks represent audio or video information. Claims 15–17, and 24 combine some of these same limitations. None of these additional limitations affect eligibility under § 101.

Since all the claims in the #908 patent share the same focus and no claim includes additional elements requiring separate § 101 analysis, I consider the subject-matter eligibility of all the claims together.

2. *Alice* Test

The #908 patent is directed to the combination of two abstract ideas. First, the #908 patent claims require compressing two different data blocks with different methods. This requirement is nothing more than duplicating the idea of compressing data plus an abstract logical conditional. The Federal Circuit has explained that duplication of an abstract idea does not affect the *Alice* test. *See Content Extraction*, 776 F.3d at 1348–49 ("repeating some steps" is not inventive). And requiring that the two methods are distinct is itself an abstract condition that does not redirect the claims away from the abstract analysis of information.

Second, the #908 patent requires that compression and storage together are faster than storage of the uncompressed data alone. This results-based limitation does not affect the subject-matter eligibility of the #908 patent compared to the previously considered patents. *Two-Way Media*, 874 F.3d at 1337 ("result-based functional language" is abstract). This speed requirement is simply a results-based logical condition, and nothing in the patent teaches how to achieve such a result. *Cf. Intell. Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1316 (Fed. Cir. 2016) ("[W]hen a claim directed to an abstract idea contains no restriction on how

the result is accomplished and the mechanism is not described, although this is stated to be the essential innovation, then the claim is not patent-eligible." (internal quotation marks, alterations, and citations omitted)). The speed result is asserted without any guidance and the written description explains that such speed benefits were already well-known in the art. *See* #908 patent at 2:13-19.

Because the additional limitations of the #908 patent relative to the #825 and #728 patents are purely abstract and do not provide any inventive steps, the #908 patent's claims are invalid for the same reasons that the #825 and #728 patents' claims are invalid.

E. The #530 Patent

The #530 patent covers systems for compressing data that are almost identical to the systems claimed in the #908 patent. The additional limitation in claim 1 of the #530 patent compared to claim 1 of the #908 patent is that the #530 patent requires that the first data block be stored with an indicator of how it was compressed and that the descriptor be used to decompress that first data block.

Having already found that the #908 patent is invalid for claiming ineligible subject matter, it follows that claim 1 of the #530 patent is also invalid. Like the #908 patent, the #530 patent is directed to the abstract idea of compressing data with multiple distinct compression methods with the required result that storage is faster. Requiring that a descriptor is stored and used to decompress is simply

another example of abstract data manipulation on generic hardware. *See Smart Sys. Innovations*, 873 F.3d at 1372.

The claims that depend from claim 1 are all the same as claim 1 for the purposes of the *Alice* test. These claims simply add additional abstract steps or apply the same idea on routine and conventional hardware. For example, claim 2 requires that the data accelerator store the first descriptor on the memory device, and claim 4 requires that the data accelerator retrieve the compressed data from the memory device. Claims 9–12 specify generic types of memory devices, claims 13 and 14 require known compression methods, and claims 22 and 23 limit the claims to certain types of data streams. None of these dependent claims have limitations that effect patent eligibility, and they are invalid for the same reasons that the #908 patent's claims are invalid.

The #530 patent also has three claims that were added during reexamination. Claim 24 is an independent system claim that adds steps requiring that the compressed data stream is buffered to be compatible with the bandwidth of the memory device. Nothing in the patent suggests that buffering a data stream to match the bandwidth limits of the receiving device was new or in any way unconventional. #530 patent at 2:33–37 (discussing the need for buffering in the prior art). The claim is the direct application of the logical flow chart illustrated in Figure 6b, which represents abstract data manipulation. #530 patent at 4:9–10 &

fig. 6b. Dependent claim 25 adds a requirement of appending encoder type descriptors to the data and dependent claim 26 requires compressing the data with a lossless encoder, where the rate of compression is adjusted based on the encoder's compression ratio. Neither of these additional limitations affects the § 101 analysis because both claims remain directed to the manipulation of information using generic hardware.

All the claims in the #530 patent are directed to the same idea as the #908 patent and are nothing more than directions to apply an abstract idea in conventional settings. Accordingly, I find that they are all invalid for claiming ineligible subject matter for the same reasons the #908 patent's claims are invalid. *See Content Extraction*, 776 F.3d at 1348 (explaining substantially similar claims directed to the same abstract idea can be considered together for subject-matter eligibility).

F. The #458 Patent

The #458 patent is also very similar to the #908 patent. Like the #908 patent, the #458 patent requires the compression of at least two distinct data blocks and that the time for compression and storage be faster than the time for storage without compression for the first data block. The major difference between the two patents is that the #458 patent requires two distinct lossless compression techniques. *See, e.g.*, #458 patent at claims 1, 9, and 17.

The § 101 analysis is identical for all claims of the #458 patent. Kaminario argues that claim 9 is representative, and I agree. Independent claims 1 and 9 of the #458 patent are directed to the same idea even though claim 1 is written in system form and claim 9 is written in method form. Independent claim 17 is nearly identical to claim 1, except that it is written in terms of a "computer-readable storage device" rather than in terms of a general system. Since these claims are directed to the same ideas and are merely expressed in slightly different ways, they are equivalent for *Alice* purposes. The dependent claims are also equivalent for § 101 purposes. All the dependent claims are directed to the same informational process, but merely limit the process to well-understood environments or add additional abstract steps. For instance, claim 10 extends the speed requirements to both data blocks, not only the first data block; and claim 11 specifies that the first data block must be analyzed based on its contents rather than a metadata descriptor. Having reviewed all the claims and finding them equivalent for the purposes of subject-matter eligibility, I adopt claim 9 as representative.

The #458 patent is directed to the abstract idea of compressing data using two distinct lossless compression algorithms such that the time to compress and store the first data block is less than the time to store the uncompressed data block. The restriction to lossless compression algorithms in the #458 patent does not make the patent any less directed to an abstract idea than the #908 patent is. A

lossless compression algorithm, like any compression algorithm, is a mathematical procedure and is thus not patent-eligible on its own. *In re Stanford*, 2021 WL 922727, at *4.

The written description of the #458 patent explains that lossless compression algorithms were well-understood at the time of patenting. #908 patent at 1:54–59. Limiting the claimed abstract idea to certain well-known algorithms does not add an inventive step. *TLI Commc'ns*, 823 F.3d at 613 (at step two "the components must involve more than performance of well-understood, routine, conventional activities previously known to the industry" (quoting *Alice*, 573 U.S. at 225) (internal quotation marks and alterations omitted)).

In all other respects relevant to the *Alice* test, the #458 patent is identical to the #908 patent. Since the #458 patent is also directed to an abstract idea and lacks any inventive features that would make it patent eligible, I find that the #458 patent's claims cover ineligible subject matter and are invalid. *See Content Extraction*, 776 F.3d at 1348 (explaining substantially similar claims directed to the same abstract idea can be considered together for subject-matter eligibility).

G. The #751 Patent

The #751 patent is directed to another variation on the theme of using compression to achieve faster data storage. The #751 patent does not require repeating the compression step over two distinct data blocks, but it does require

choosing a compression method based on the content of the data. It combines ideas from the #825 and #908 patents. The #751 patent's claims also require that the "compression uses a state machine." *See, e.g.*, #751 patent at claim 1. A state machine is an abstract model in certain compression methods. #751 patent at 9:6–10, 15:27–29.

Kaminario argues that claim 1 is representative. *Kaminario*, 19-0350, D.I. 24 at 8. I agree. The #751 patent contains two independent claims and 46 dependent claims. Although claim 1 is written in method form and claim 25 is written in system form, the two claims are identical in all material respects. The dependent claims add limitations requiring additional abstract steps or conditions relating to the receipt, processing, or transmission of data. For example, claim 2 adds the additional abstract step of transmitting both control information and the compressed data, claims 17 and 18 describe the type of table used in the state machine, and claim 21 specifies that that compression method is lossless. None of the limitations in any of the dependent claims affect the *Alice* inquiry.

I find that the #751 patent is directed to the abstract idea of compressing data with a state machine, under conditions where compressing and storing the data is faster than storing the uncompressed data and where the compression method applied to the data is based on the content of the data. The #751 patent explains that a "state machine" is an element in "Huffman or Arithmetic encoding" and that

these compression methods were well known in the art. #751 patent at 9:6–10, 15:27–29. The written description teaches that each state machine is a set of nodes and pointers containing encoding tables and pointers based on the data's character sequence. #751 patent at 9:11–20. Essentially, the state machine is a form of a cipher, which makes the state machine an abstract component in a method for information processing. *See Elec. Power Grp*, 830 F.3d at 1353. Thus, the #751 patent's claims are directed to abstract information processing.

The #751 patent also does not contain any inventive features beyond the abstract idea. The #751 patent fully incorporates by reference the written description of the #825 patent, and therefore also provides that the claimed systems and methods can be performed on conventional computer hardware with well-known compression techniques. *See* #751 patent at 6:20–27; #825 patent at 2:65–66, 6:26–31, 7:7–11. The patent further explains that compression methods using state machines were well-known. #751 patent at 15:27–29. The addition of the "state machine" limitation therefore neither redirects the focus of the invention away from the claimed abstract idea nor adds any inventive step capable of transforming the claimed processes and methods into a patent-eligible invention. Thus, the #751 patent is invalid for the same reasons the previously considered patents are invalid.

H. The #204 Patent

The #204 patent claims methods for compressing and broadcasting data. Every claim in the #204 is directed to the abstract idea of compressing information before transmitting it. All the patent's claims require taking data, selecting an encoding scheme, compressing the data with that encoding scheme, and then transmitting or broadcasting the data. All of these steps are abstract because they are nothing more than information processing. *See SAP Am.*, 898 F.3d at 1167.

The #204 patent also lacks any additional features that transform the claimed idea into a patent-eligible invention. The #204 patent does not teach how to achieve faster transmission. Rather, it simply includes faster transmission or a higher compression ratio as limitations in the claims. These results-based limitations are abstract and do not change the § 101 analysis. *See Two-Way Media*, 874 F.3d at 1337. And, as with the other asserted patents, the disclosed analysis can be performed with well-understood compression methods on generic computers. #204 patent at 8:3-25; 15:13–17.

The three independent claims are informative. The claims vary in how they specify the required amount of compression. Claim 1 requires a compression ratio of 10:1. Claim 12 requires a compression ratio of at least 4:1 and adds a speed requirement that compression and transmission be faster than transmission without compression. This speed requirement is for all relevant purposes identical to the

speed requirement previously discussed in the #908 patent. Claim 22 repeats the speed and compression ratio limitations of claim 12 but is restricted to financial data and requires a list mapping data fields to particular encoders. Despite these differences, the focus of all the claims is still on the abstract operations of receiving, processing, and transmitting information. The dependent claims add information processing steps and narrowing limitations, such as limiting the data to financial information or requiring the data field to include stock information. #204 patent at claims 5 and 6. As additional examples, claim 4 requires that more than one message be within a data packet, and claim 8 specifies that compression is lossy. But none of these limitations alter the focus of the claims or add any new inventive steps.

Accordingly, the #204 patent is invalid under § 101.

I. The #203 Patent

The #203 patent covers systems and methods for compression and decompression that are similar to the systems and methods claimed in the previously discussed patents.

Claims 21 and 27 recite another version of a compression system that compresses data based on the characteristics of that data and that has an output interface that provides a data token identifying the selected encoding method. Claim 21 is written as a method and claim 27 is written as a system. Dependent

claims 22–26 and 28–30 add additional informational processing steps or narrow the claims to certain contexts and applications. None of these limitations affect the § 101 inquiry. These claims are another variation on the compression claims previously discussed. They are directed to the abstract idea of compressing data based on the characteristics of that data and contain no additional features that make them patent eligible.

Claims 1 and 14 cover the corresponding decompression method and system. In these claims the data token provided during compression is used to decompress the data. In other words, these claims are directed to the abstract idea of decompressing data based on a token signifying the compression method where that method was selected based on the characteristics of the data. The dependent claims again add additional information processing steps or narrow the application of the claimed idea to certain contexts and applications without providing any additional features that would make the claims patent eligible. Once again, at step one of the *Alice* test, the claims are directed to an inherently abstract procedure for transforming data. And at step two, the claims do not add any "additional features" such that the claims cover eligible subject-matter.

For these reasons, I find that the #203 patent is invalid for claiming ineligible subject matter.

J. General Discussion

The preceding discussion of the eight asserted patents can be summarized as follows. At step one of the *Alice* test, every claim in every asserted patent is directed to the concept of manipulating information using compression. Because data compression is, without more, simply a form of data analysis, the claims are directed to abstract ideas. *See SAP Am.*, 898 F.3d at 1167. At step two of the *Alice* test, a claim must provide "'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Alice*, 573 U.S. at 221 (alterations in original) (quoting *Mayo*, 566 U.S. at 77). But the asserted patents contain no such features. Rather, they simply apply an abstract idea on generic computers with generic techniques. This is not enough to transform the claimed idea into a patent-eligible invention. *Id.* at 225.

Realtime's principal argument is that the asserted patents are not directed to an abstract idea, because they "provide particular technological solutions to overcome technological problems specific to the field of digital data compression." *Kaminario*, 19-0350, D.I. 33 at 9. But the patents do not provide technological solutions. To the extent that the patents teach anything, it is simply the benefits of data compression. *See, e.g.,* #825 patent at 1:65–67 ("Data compression is widely used to reduce the amount of data required to process, transmit, or store a given quantity of information."); #825 patent at 2:64–3:3 (noting that there are many

known techniques for content dependent encoding); #908 patent at 2:14–19 ("First, data compression can reduce the time to transmit data by more efficiently utilizing low bandwidth data links. Second, data compression economizes on data storage and allows more information to be stored for a fixed memory size by representing information more efficiently.").

The patents do not provide a technical solution to a technical problem because they do not teach how to engineer an improved system. *See Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1345 (Fed. Cir. 2018) (explaining that a patent is not directed to a technical solution when it covers results without teaching how to obtain those results). The asserted patents allow the use of *any* compression method. *See* #908 patent 16:49–54 ("the data storage accelerator 10 employs . . . any conventional data compression method suitable for compressing data at a rate necessary for obtaining accelerated data storage); #825 patent at 7:7–11; #204 patent at 15:12–22; #203 patent at 16:30–16:42. The patents do not teach a technical solution to analyze data. *See, e.g.*, #825 patent at 16:15–24 (describing a content dependent data recognition module without any specificity). Nor do the patents teach how to achieve the claimed efficiency benefits, beyond directing the skilled artisan to apply well-known techniques. *See WhiteServe LLC v. Dropbox, Inc.*, No. 19-2334, slip op. at 9, (Fed. Cir. Apr. 26, 2021) (finding patent invalid under § 101 when "[t]he specification d[id] not [] explain the technological

processes underlying the purported technological improvement."). In arguing that the patents teach a specific way of or structure for performing compression, Realtime is only able offer conclusory statements while repeating the same generic language in the claims. *See, e.g.*, *Reduxio*, 17-1676, D.I. 14 at 10–12. In short, while the patents do disclose potential challenges (e.g., the problem of selecting the best compression method for given data), they do not teach *how* to address those challenges.

Realtime argues that I must be careful to not oversimply the patents, because "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo.,* 566 U.S. at 71 (2012). I do not disagree with the premise of this argument; but, in this case, the asserted patents are written at a high level of generality and the identified abstract ideas fairly capture the focus of the claims. Realtime's own descriptions of the patents are substantially similar to the abstract ideas I find the patents directed to. For example, Realtime describes the #728 patent as being directed to "digital data compression/decompression utilizing two encoders[/decoders] (e.g., content dependent and content independent) to compress/decompress data blocks based on an analysis of the specific content of the data." *Tegile Systems,* No. 18-1267, D.I. 20 at 7. Even under Realtime's own characterization of the asserted patents, they are directed to the abstract analysis of data.

The asserted patents are not, as Realtime argues, "highly specific." *Kaminario*, 19-0350, D.I. 33 at 14. The Federal Circuit recently remarked in *In re Stanford* that it was "hard to imagine a patent claim that recites hardware limitations in more generic terms," because it required a "computer" with a "processor" and "memory." That observation applies equally here. *See, e.g.*, #458 patent at claim 1 (reciting a "memory device" and "one or more processors"). Indeed, in this case many of the asserted patents do not even require generic computer components. The #825 patent's claims are written even more generically than the claims at issue in *In re Stanford*. They require "associating," "analyzing," "identifying," and "compressing" without mentioning any hardware to implement these processes. Similarly, in the #530 patent, claim 1 requires a "memory device" and a "data accelerator," neither of which are limited to computer devices. (The patent describes a "memory device" as covering "all forms and manners of memory devices," and the "data accelerator" is functionally defined and could be nearly anything. #530 patent at 2:51, 5:8–13.) "Claims directed to generalized steps to be performed on a computer using conventional computer activity are not patent eligible." *Internet Pats.*, 790 F.3d at 1348–49; *see also WhiteServe*, slip op.

at 8 (reiterating that claims invoking computer functionality to manipulate data are subject-matter ineligible).[4]

[4] The cases cited by Realtime where patents were found eligible under § 101 are inapposite because the patents in those cases were "necessarily rooted in computer technology." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014). In *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.* the patents were directed to improvements in graphical user interfaces for electronic devices with small screens. 880 F.3d 1356, 1362 (Fed. Cir. 2018). In *Enfish* the claimed invention provided a new method to construct databases. 822 F.3d at 1335–36. In *Visual Memory LLC v. NVIDIA Corp.* the patents taught a new, particularized memory system. 867 F.3d 1253, 1259–60 (Fed Cir. 2017). And in *Finjan, Inc. v. Blue Coat Systems, Inc.* the asserted patent was directed to improvements in computer virus scanning, which is a concern unique to computers. 879 F.3d 1299, 1305 (Fed. Cir. 2018).

Realtime also relies heavily on Magistrate Judge Love's opinions regarding the #530 and #908 patents and their adoption by judges in other districts in different proceedings. *See* Order Adopting Report and Recommendation of United States Magistrate Judge, *Realtime Data, LLC v. Actian Corp.*, 2016 WL 11089485 (E.D. Tex. Jan. 21, 2016); Report and Recommendation of United States Magistrate Judge, *Realtime Data, LLC v. Actian Corp.*, 2016 WL 11089485 (E.D. Tex. Nov. 30, 2015); Report and Recommendation of United States Magistrate Judge, *Realtime Data, LLC v. Carbonite, Inc.*, 2017 WL 4693969 (E.D. Tex. Sept. 20, 2017). I disagree with Magistrate Judge Love's conclusions, and note that since those opinions were issued, the Federal Circuit has reaffirmed that the processing of information, without more, is not patent eligible. *See, e.g.*, *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1327–28 (Fed. Cir. 2020) (rejecting plaintiff's argument that the claims solved a specific computer problem because the claims lack specificity and were not particularized to any technical environment); *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1364 (Fed. Cir. 2020) (explaining that a patent is not directed to a patent-eligible improvement in computer functionality when computers are invoked as the tools for abstract processes).

The patents' lack of a technical solution is highlighted by the claims' focus on results and benefits without teaching how to achieve those results and benefits. The faster speed and compression ratio limitations of the #530, #204, #908, #751, and #458 patents are paradigmatic examples of results-based claiming. And assertions of beneficial results do not allow a claim directed to an abstract idea to bypass the requirements of § 101. *Elec. Power Grp.*, 830 F.3d at 1351 (holding that claims on a "desirable information-based result" that are "not limited to inventive means of achieving th[at] result" are invalid under § 101); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016) (finding patent claims directed to abstract ideas because they did "not claim a particular way of programming or designing . . . but instead merely claim the resulting systems."); *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, 838 F.3d 1266, 1269 (Fed. Cir. 2016) (finding claims abstract because they did "no more than describe a desired function or outcome, without providing any limiting detail that confines the claim to a particular solution to an identified problem.").

While it might be the case that the patents' claims describe systems and methods that are useful when applied on computers, that fact does not by itself make the claims patent eligible. Many ideas are useful, but their utility does not make them patentable. Einstein's theory of relativity is useful, but it is not patent

eligible. *Mayo*, 566 U.S. at 71 ("Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity.").

Here, the utility of the ideas to which the asserted patents are directed does not change the fact that the patents are directed to abstract ideas. *See Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 910 (Fed. Cir. 2017) ("The fact that an [idea] can be used to make a process more efficient, however, does not necessarily render an abstract idea less abstract."); *Voit Techs. LLC v. Del-Ton, Inc.*, 757 F. App'x 1000, 1003–04 (Fed. Cir. 2019) ("claims directed to 'improved speed or efficiency inherent with applying the abstract idea on a computer' are insufficient to demonstrate an inventive concept" (quoting *Intell. Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015)). This is a case where "patent-ineligible abstract ideas are plainly identifiable and divisible from the generic computer limitations recited by the remainder of the claim." *DDR Holdings*, 773 F.3d at 1256 (noting that such patents are subject-matter ineligible).

Efficiency gains are not the same as a technical solution to a technical problem. *DDR Holdings* teaches that because it can be difficult to distinguish between abstract ideas and patent-eligible inventions in the realm of computer software, one test is to ask if the patent teaches improvements that resolve problems unique to computers. 773 F.3d at 1255–59 (finding a patent claimed eligible subject matter because "the claimed solution is necessarily rooted in

computer technology in order to overcome a problem specifically arising in the realm of computer networks"). Since such technical problems *only* exist in the context of computers, solutions to those problems are effectively directed to improved computers, which are not abstract. But here the claims are not directed to a problem that is unique to digital computers. In other words, they are not directed to improved computers but to various ideas involving compression that may be usefully applied by computers.

Realtime argues that its claims "are necessarily directed to improved systems of **digital data compression**." *Reduxio*, No. 17-1676, D.I. 14 at 13 (emphasis in original). But digital data compression is abstract. Compression has a long history outside of computer technology. Everyday uses of compression include shorthand, abbreviations, the repeat symbol in musical notation, and scientific notation. These methods of compression are chosen in part based on the content of the information being compressed. Problems related to the bandwidth of information transfer and receipt are inevitable for any form of information exchange, including exchanges of digital data, which is simply the representation of information in the form of "0"s and "1"s. The digital compression described in the asserted patents involves applying an (unspecified) algorithm to that sequence of "0"s and "1"s. Nothing prevents this type of analysis from being done on pen and paper.

Realtime relies on the patents' statement that "**digital data** is thus a representation of data that [is] **not easily recognizable to humans** in its native form." *Reduxio*, No. 17-1676, D.I. 14 at 14 (emphasis and alterations in original) (citing #908 patent at 1:35–37; #728 patent at 1:52–54). But the fact that digital data is not easily recognizable does not mean that a human is incapable of analyzing it or that it is inherently rooted in computer technology. Indeed, the written descriptions of the patents, while sometimes focusing on computer applications, also recognize the pervasive nature of information exchange and attempt to reach any and all such communication. For instance, the #751 patent describes itself as "universally applicable to all forms of data communication." #751 patent at 1:43–44; *see also* #204 patent at 8:29–33 ("It should be noted that the techniques, methods, and algorithms and teachings of the present invention are representative and the present invention may be applied to any financial network, trading system, data feed or other information system."). The problems of information storage and transmission are not limited to a particular technological environment, and so an idea that addresses such problems generally is not a technological solution. *See DDR Holdings*, 773 F.3d at 1257.

At an oral argument, Realtime agreed that claim 25 of the #751 patent, which it treated as representative, was directed to "analyz[ing] the content of a data block to identify a parameter or attribute or value of that block" where the analysis

is not "based solely on reading a descriptor." Hr'g at 26:18–21, Jul. 21, 2019. Realtime was then unable to cogently articulate how this focus was anything more than the abstract analysis of information. When I pressed counsel during argument to "show me where [claim 25 is] not abstract," he replied: "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." *Id.* at 27:3–8. But looking at the content of the data as opposed to the data's descriptor is an abstract concept. A human being can look at the data's content instead of its descriptor. Counsel did not identify, and the patent does not teach, a technical solution that makes it possible for a computer to look at content as opposed to a descriptor.

Realtime also raises an argument based on its proposed claim constructions. Realtime proposes the following constructions:

- "compressing" / "compressed" / "compression": representing / represented / representation of data with fewer bits
- "descriptor": recognizable digital data
- "data stream": one or more data blocks transmitted in sequence
- "data block": a single unit of data, which may range in size from individual bits through complete files or collection of multiple files
- "analyze": directly examine

D.I. 33 at 36. Realtime argues that its proposed constructions "confirm" that the asserted patents are "focused" on "a technical sub-species of digital data compression." D.I. 33 at 36. But "[t]he mere fact that Defendants' proposed

constructions might be more specific and therefore limited to a particular technological environment does not transform an otherwise abstract idea into a patent-eligible application." *Reese v. Sprint Nextel Corp.*, 774 F. App'x 656, 660 (Fed. Cir. 2019), *cert. denied*, 140 S. Ct. 2507 (2020). Realtime's proposed constructions confirm that the claims are directed to data analysis. And Kaminario, the sole defendant against which Realtime has identified particular constructions, does not dispute Realtime's constructions for the purposes of its motion. D.I. 34 at 19–20. Accordingly, there is no claim construction dispute relevant to eligibility, and therefore I do not need to engage in claim construction before ruling on the pending motions. *Cleveland Clinic*, 859 F.3d at 1360 ("[Plaintiffs] provided no proposed construction of any terms . . . that would change the § 101 analysis. Accordingly, it was appropriate for the district court to determine that the testing patents were ineligible under § 101 at the motion to dismiss stage.").

Realtime also emphasizes dicta in *DDR Holdings* in which the Federal Circuit remarked that the claims at issue were not "as technologically complex as an improved, particularized method of digital data compression." *DDR Holdings*, 773 F.3d at 1259. But this statement does not mean that all patents related to compression are subject-matter eligible. The asserted patents do not in fact offer a "technologically complex . . . improved, particularized method" for compression

but instead recite abstract ideas with only the most general directions to apply those ideas.

Finally, Realtime argues that even if every individual element of the claims were well-understood or conventional at the time of patenting, the combination of those elements is not. *Tegile Systems*, No. 18-1367, D.I. 20 at 19 (citing *BASCOM Global Internet Servs. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016)). But simply combining understood steps and generic hardware in a logical, straightforward sequence in order to implement an abstract idea does not provide an "inventive concept." In *BASCOM*, the arrangement of elements was essential to the claimed invention, and the Federal Circuit explained that the "particular arrangement of elements [was] a technical improvement over [the] prior art." *BASCOM*, 827 F.3d at 1350. But the asserted patents here do not provide a technical improvement. Rather they "merely recite [an] abstract idea . . . along with the requirement . . . to perform it on a set of generic computer components." *Id.* *BASCOM* explained that "[s]uch claims [do] not contain an inventive concept." *Id.* Even when considered as an "ordered combination," the asserted patents lack the additional features requires at step two of the *Alice* inquiry. *Alice*, 573 U.S. at 217.

In short, the asserted patents are nothing "more than a drafting effort designed to monopolize" abstract ideas for data compression. *Mayo*, 566 U.S. at 77 (2012). Accordingly, they are invalid under § 101.

IV. CONCLUSION

For the reasons stated above, I find that all claims of the asserted patent are invalid under § 101 for lack of subject-matter eligibility. Accordingly, I will grant Defendants' motions to the extent they seek dismissal of the operative complaints on § 101 grounds.

Realtime has requested leave to amend some of its operative complaints, and accordingly I will give it 14 days to do so in each case.

The Court will issue Orders consistent with this Memorandum Opinion.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

Realtime Data LLC, Plaintiff, v. Array Networks Inc., et al., Defendant.	Civil Action No. 17-0800-CFC CONSOLIDATED

ORDER

At Wilmington this Fourth day of May in 2021:

For the reasons set forth in the Memorandum Opinion issued this day, **IT IS HEREBY ORDERED** that:

1. In Civil Action Number 17-1635, Fortinet, Inc.'s "Defendant's Motion to Dismiss" (D.I. 11) is **GRANTED IN PART**. The motion is **GRANTED** to the extent that it is based on the asserted patents claiming ineligible subject matter. The remainder of the motion is **DENIED AS MOOT**.

2. In Civil Action Number 17-1676, Defendant Reduxio Systems Inc.'s "Motion to Dismiss Pursuant to Federal Rule of Civil Procedure 12(b)(6)" (D.I. 9) is **GRANTED**;

3. In Civil Action Number 18-1200, "Panzura's Motion to Dismiss Plaintiff's Complaint and Joinder in Western Digital's and Project Taurus's Motions to Dismiss" (18-1200, D.I. 21) is **GRANTED**;

4. In Civil Action Number 18-2062, "Defendant Aryaka Networks, Inc.'s Motion to Dismiss" (D.I. 15) is **GRANTED IN PART**. The motion is **GRANTED** to the extent that it is based on the asserted patents claiming ineligible subject matter. The remainder of the motion is **DENIED AS MOOT**.

5. In Civil Action Number 119-0350, "Kaminario, Inc's Motion to Dismiss for Failure to State a Claim" (D.I. 23) is **GRANTED.**

6. U.S. Patent Nos. 7,415,530, 8,717,203, 8,933,825, 9,054,728, 9,116,908, 9,667,751, and 10,019458 are **INVALID.**

7. Plaintiff is **GRANTED** leave to file amended complaints in the consolidated actions within 14 days of entry of this order.

UNITED STATES DISTRICT JUDGE