UNITED STATES PATENT AND TRADEMARK OFFICE

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

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ALLADIN, AMBREEN A

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte JAN TILFORS

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Appeal 2016-008051
Application 13/600,805
Technology Center 3600

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Before JOHN A. JEFFERY, JOHN P. PINKERTON, and
STEVEN M. AMUNDSON, *Administrative Patent Judges.*

PINKERTON, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's
Final rejection of claims 1–21, which constitute all of the claims pending in
this application. We have jurisdiction under 35 U.S.C. § 6(b).[1]

We AFFIRM.

STATEMENT OF THE CASE

Introduction

Appellant's disclosed and claimed invention is generally directed to "determining how a quantity of an order in a market is allocated to other orders in the market." Spec. 1, ll. 6–7.[2] Appellant acknowledges the Specification describes in detail "how an automated exchange computer system can be programmed in a particular manner to match electronically submitted orders." App. Br. 26. Appellant submits, however, that the amended claims on appeal "are directed to a particular technique for automatically processing electronic data messages against those electronic data messages that have been previously received (and not yet processed)." *Id.* at 29.

Claim 1 is representative and reproduced below (with the disputed limitations emphasized in italics):

> 1.   A method performed on a computer server system that includes a memory device storing a plurality of pending data messages that are to be operated on, each one of the plurality of pending data messages having (a) a numerical value, (b) a data message type identifier for the respective data message, and (c) a participant identity parameter associated with the respective pending data message, the computer server system including processing circuitry and receiver circuitry, the method comprising:

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[2] Our Decision refers to the Final Office Action mailed June 18, 2015 ("Final Act."); Appellant's Appeal Brief filed Dec. 21, 2015 ("App. Br.") and Reply Brief filed Aug. 23, 2016 ("Reply Br."); the Examiner's Answer mailed June 23, 2016 ("Ans."); and the original Specification filed Aug. 31, 2012 ("Spec.").

receiving, by the receiver circuitry, a signal comprising an incoming data message that includes a data transaction request with (a) a specified data message type identifier, (b) at least one predefined instruction from among a plurality of possible predefined instructions, and (c) a quantity value;

for each one of the plurality of pending data messages with a data message type identifier that is the specified data message type identifier, accessing, by using the processing circuitry, the respective pending data message to determine the participant identity parameter for the accessed respective pending data message;

for each determined participant identity parameter having pending data messages with the specified data message type identifier, *determining*, by the processing circuitry, *a collective time that pending data messages with the determined participant identity parameter and the specified data message type identifier have spent on at least one dynamically determined numerical value that is associated with the specified data message type identifier*; and

processing, by the processing circuitry, the data transaction request included in the incoming data message to the plurality of pending data messages based on the determined time spent on the *dynamically calculated numerical value* by said determined participant identity parameter.

App. Br. 35 (Claims App'x).

Rejections on Appeal

Claims 1–21 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent-ineligible subject matter. Final Act. 2–3.

Claims 1–21 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written-description requirement.[3] Final Act. 3–4.

Claims 1–21 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor regards as the invention. Final Act. 5–6.

Claims 1–21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carone et al. (US 2012/0158567 A1; published June 21, 2012) ("Carone") and Altius (US 2009/0182657 A1; published July 16, 2009).[4] Final Act. 7–26.

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellant's arguments in the Briefs. For the reasons discussed *infra*, we are not persuaded by Appellant's arguments that the Examiner erred in rejecting

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[3] The Examiner withdrew the rejection under 35 U.S.C. § 112, first paragraph, with respect to claim 12 as to the access, determination, and processing circuitry and claims 5, 6, 16, and 17 as to the previous and current trading day. *See* Ans. 2.

[4] The Examiner finds claims 1 and 11, and their dependent claims, are so indefinite that no art rejection is warranted. Final Act. 6 (citing *In re Steele*, 305 F.2d 859 (CCPA 1962)). The Examiner also finds that, although Appellant has broadened the claims by amendment, the Examiner finds Appellant is attempting to claim the same invention as before and, as such, the prior art of record "appears to still be applicable." *Id.* at 7.

claims 1–21 under 35 U.S.C. §§ 101 and 112, first paragraph, with respect to the claim 1 limitation of the dynamically "calculated" numerical value. However, we are persuaded by Appellant's arguments the Examiner erred in rejecting claims 1–21 under 35 U.S.C. §§ 103(a) and 112, first paragraph, other than with respect to the aforesaid limitation of claim 1, and second paragraph.

Rejection of Claims 1–21 Under § 101

Applicable Law

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: "Laws of nature, natural phenomena, and abstract ideas are not patentable." *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (citation omitted).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 75–77 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* For example, abstract ideas include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 2355–57. The "directed to" inquiry asks not whether "the claims *involve* a patent-ineligible

concept," but instead whether, "considered in light of the specification, . . . 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (citations omitted). In that regard, we determine whether the claims "focus on a specific means or method that improves the relevant technology" or are "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) (citation omitted).

If, at the first stage of the *Alice* analysis, we conclude that the claim is not directed to a patent-ineligible concept, it is considered patent eligible under § 101 and the inquiry ends. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016).

If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S. Ct. at 2350 (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to "search for 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 2355 (quoting *Mayo*, 566 U.S. at 72–73). The prohibition against patenting an abstract idea "'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant post-solution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (citation omitted).

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Examiner's Findings and Conclusions

The Examiner concludes that claims 1–21 are directed to the abstract idea of exchange trading and the additional elements or combination of elements in the claims do not transform the abstract idea into a patent-eligible application of the abstract idea. Final Act. 2–3. In response to Appellant's arguments in the Appeal Brief, the Examiner finds the claims have been amended "in an attempt to overcome the 101 rejection," but also finds the claims can be "directed to" an abstract idea without an express recitation in the claims. Ans. 32–33. The Examiner finds the Specification makes it clear the invention involves "automated exchanges and trading orders" (*id.* at 33, (citing Spec. 1, ll. 5–9)), and further finds the Specification "is laden with references to an 'automated exchange' (noted 77 times in the specification), 'trading' (115 times) and 'order(s)' (440 times)." *Id.* at 33. After analyzing the limitations of claim 1 (and noting that system claim 11 recites similar limitations), the Examiner finds:

> These steps describe a method where data messages with a numerical value, message type identifier and participant identity identifier are stored on a server with a memory; receiving data messages; accessing the data messages, processing and comparing the received data with stored data; determining how long a data message has been at a determined value and processing the data transaction within a data message based on that determination.

Id. at 36. The Examiner further finds these steps are similar to "the concepts previously identified as abstract ideas by the courts such as *Dealertrack Inc.* (processing information); *SmartGene, Inc.* (comparing new and stored information and using rules to identify options); *Cyberfone Systems* (using

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categories to organize, store and transmit information); *Bilski* (risk hedging) and *Alice* (intermediate[d] settlement)." *Id.*

Regarding step two of *Alice*, the Examiner concludes the claim elements do not amount to significantly more than the judicial exception "because the claims do not provide improvements to another technology or technical field, improvements to the functioning of the computer itself, and do not provide meaningful limitations to the abstract idea to a particular technological environment." *Id.* at 37, 38–42.

<u>Appellant's Arguments</u>[5]

Appellant argues that the pending claims meet the explicit requirements of subject-matter eligibility under 35 U.S.C. §§ 101 and 100(b) because they "cover new uses of a known machine," and the implicit exception set forth in *Alice* should be "*narrowly* applied in order to give full purpose and effect to the operation of the statute at issue." App. Br. 24–25 (citing *John Hancock Mut. Life Ins. Co. v. Harris Trust & Sav. Bank*, 510 U.S. 86, 97 (1993)). Regarding step one of *Alice*, Appellant argues the claims are not directed to the abstract idea of exchange trading because the claims "do not <u>recite</u> an exchange, trading, or trading on an exchange." *Id.* at 26. According to Appellant, the claims are "directed to a particular technique for automatically processing electronic data messages against those electronic data messages that have been previously received (and not yet processed)," which is not an abstract idea. *Id.* at 28–29. Appellant also

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[5] Appellant argues the rejection of claims 1–21 under § 101 as a group, focusing on claim 1. We consider claim 1 to be representative of the claimed subject matter on appeal and, therefore, we decide the rejection of claims 1–21 on the basis of representative claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv)(2016).

argues that the technical solution set forth in the claims "relates to a new way of allocating or processing the incoming orders in a specific and detailed way that takes into account the total or aggregate time." App. Br. 29; *see also* Reply Br. 4. Regarding step two of *Alice*, Appellant argues "it is clear the claims require *substantially* more than just the alleged abstract idea (or its simple application to a general purpose computer) — *i.e.*, more than just the 'abstract idea of exchange trading.'" App. Br. 30; Reply Br. 5. After reproducing claim 1, Appellant argues "[t]hese features are significantly more than just the general application of 'exchange trading' as alleged by the FOA." App. Br. 31. Appellant further argues that without "such detail and specificity, the claims would likely be anticipated by the art"; and, for the reasons argued by Appellant, "the claims are <u>clearly</u> not obvious over the currently relied upon art." *Id.* According to Appellant, the claimed features of: (1) determining a collective time that pending data messages have spent on at least one dynamically determined numerical value; and (2) processing the transaction request based on the determined time spent on "the dynamically calculated numerical value" are individually and collectively significantly more than the asserted abstract idea.[6] *Id.* at 31–32. Appellant also argues the claims at issue are "like the claims at issue in *Trading Technology Intl.[, Inc.] v. CQG, Inc.*[7] where the district court held the claims allegedly directed to 'placing an order for a commodity on an

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[6] As discussed *infra*, we find the claim 1 limitation of "the dynamically calculated numerical value" is not supported by the Specification and, therefore, fails to meet the written-description requirement of § 112, first paragraph.
[7] 2015 WL 774655, at *4 (N.D. Ill., Feb. 24, 2015).

electronic exchange' required substantially more than that characterization."
Id. at 33.

<u>Step One of *Alice*</u>

We are not persuaded by Appellant's arguments that the Examiner erred in concluding claim 1 is directed to patent-ineligible subject matter— an abstract idea. Although Appellant correctly argues that the claims are directed to categories of patentable subject matter identified in 35 U.S.C. § 101, and described in 35 U.S.C. § 100(b), as stated *supra*, the Supreme Court held in *Alice* there are implicit exceptions to these categories that are not patentable, including abstract ideas. *Alice*, 134 S. Ct. at 2354.

Although Appellant amended the claims to delete certain terms relating directly to order trading, the Examiner concludes claim 1 is directed to "exchange trading" because the Specification makes it clear the invention concerns "automated exchanges and trading orders." *See* Ans. 32–33. The Examiner also concludes the steps of claim 1 are similar to concepts previously identified as abstract by the courts, such as "processing information" and "comparing new and stored information and using rules to identify options." *Id.* at 36.

With respect to claim 1, the preamble recites a method performed on a computer server system including a memory device storing a plurality of pending data messages, each having a numerical value, a data message type identifier, and a participant identity parameter. Claim 1 recites the steps of: (1) receiving a signal comprising an incoming data message that includes a data transaction request with (a) a specified data message type identifier, (b) at least one predefined instruction, and (c) a quantity value; (2) for each of the pending data messages with an identifier matching the specified

identifier, accessing the pending data message to determine the participant identity parameter; (3) for each participant identity parameter having pending data messages with the specified identifier, determining a collective time that pending data messages have spent on at least one dynamically determined numerical value associated with the specified identifier; and (4) processing the data transaction request based on the determined time spent on the dynamically calculated numerical value by the determined participant identity parameter. These steps define storing data messages; receiving data messages including a data transaction request; accessing and analyzing the stored data messages to determine those having a specified identifier and participant parameter; analyzing such data messages to determine the time they have been at a determined value; and processing the data transaction request based on the determined time.

Considering the focus of claim 1 as a whole, we agree with the Examiner's conclusion that claim 1 is directed to an abstract idea— processing a data transaction request. We see no meaningful difference in claim 1 and similar or analogous claims in other cases that our reviewing court has found are directed to an abstract idea. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) ("The concept of data collection, recognition, and storage is undisputedly well-known."); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (claims focus on the abstract idea of collecting information, analyzing it, and displaying certain results of the collection and analysis); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1341 (Fed. Cir. 2017) (holding that the claimed

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invention is directed "to the abstract idea of collecting, displaying, and manipulating data of particular documents").

We also conclude that the steps recited in claim 1 could be "performed mentally" by a human with pen and paper. In that regard, our reviewing court has held that "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category." *Elec. Power*, 830 F.3d at 1354; *see also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146 (Fed. Cir. 2016). "[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter." *Bancorp Servs., LLC v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012).[8]

For the same reasons, we are not persuaded by Appellant's arguments that the claims are directed to "a particular technique" for automatically processing data messages against those previously received, which is not an abstract idea, or that the "technical solution" set forth in claim 1 "relates to a new way" of processing incoming orders. *See* App. Br. 28–29; Reply Br. 4. In that regard, Appellant has not identified any disclosure in the Specification, or provided other persuasive evidence or technical reasoning, that the "particular technique" or "new way" of processing data messages provides a technological advance or improvement, or advantage, to

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[8] *See also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").

computer technology or data processing. Nor do the claims recite any such technologic advance, improvement, or advantage.

Step Two of *Alice*

We also are not persuaded by Appellant's arguments regarding step two of the *Alice* analysis. First, Appellant argues claim 1 requires "substantially more" and "significantly more" than the alleged abstract idea (*see* App. Br. 30–32; Reply Br. 5), but these arguments are unpersuasive. As discussed *supra*, Appellant has not provided persuasive evidence or technical reasoning establishing that there are any technological advances or improvements in claim 1's computer server or data processing system or that processing a transaction request based on the collective time pending messages have spent on a determined value provides advantages to the processing system. Claim 1 does not "focus on a specific means or method that improves the relevant technology," but is "directed to a result or effect that itself is the abstract idea and merely invoke[s] generic processes and machinery." *McRO*, 837 F.3d at 1314. This is not enough to transform an abstract idea into patent-eligible subject matter. *See, e.g., Alice*, 134 S. Ct. at 2360 (explaining that claims that "amount to 'nothing significantly more' than an instruction to apply the abstract idea . . . using some unspecified, generic computer" "is not '*enough*' to transform an abstract idea into a patent-eligible invention") (quoting *Mayo*, 566 U.S. at 77, 79)); *Intellectual Ventures,* 850 F.3d at 1342 ("[T]he claim language here provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it.").

Second, we are not persuaded by Appellant's arguments that the claims are detailed and specific and, therefore, are not anticipated or

obvious. App. Br. 31. A finding of novelty or non-obviousness does not automatically lead to the conclusion that the claimed subject matter is patent-eligible. Although the second step in the *Mayo/Alice* framework is termed a search for an "inventive concept," the analysis is not an evaluation of novelty or non-obviousness, but rather, a search for "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.'" *Alice Corp.*, 134 S. Ct. at 2355. "Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry." *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013). A novel and non-obvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90; *see also Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) ("The '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.").

Third, we are not persuaded by Appellant's argument that claim 1 is like the claims at issue in *Trading Technologies*,[9] where the district court held the claims required substantially more than placing an order for a commodity on an electronic exchange. App. Br. 33. In *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017),[10] the patents in suit "describe[d] and claim[ed] a method and system

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[9] *Trading Techs. Int'l, Inc. v. CQG, Inc.*, No. 05-CV-4811, 2015 WL 774655, at *4 (N.D. Ill. Feb. 24, 2015) (hereinafter *"Trading Technology"*).
[10] *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017) (hereinafter *"Trading Techs."*).

for the electronic trading of stocks, bonds, futures, options and similar products" where a graphical user interface displayed the "market depth of a commodity traded in a market," including a dynamic display of bids and asks for the commodity and a static display of prices. *Trading Techs.*, 675 F. App'x at 1002–03. The claimed method and system "reduc[ed] the time . . . for a trader to place a trade when electronically trading on an exchange, [and] thus increas[ed] the likelihood that the trader will have orders filled at desirable prices and quantities." *Id.* at 1003. The Federal Circuit accepted the district court's findings with respect to step two of *Alice* that the claims provided "an inventive concept that allows traders to more efficiently and accurately place trades using this electronic trading system." *Id.* at 1004. In discussing the district court's opinion, the Federal Circuit noted "[t]he court distinguished this system from the routine or conventional use of computers or the Internet, and concluded that the specific structure and concordant functionality of the graphical user interface are removed from abstract ideas, as compared to conventional computer implementations of known procedures." *Id.* Accordingly, the distinguishing feature under *Alice* step two for the claims in *Trading Technologies* was an advance in efficiency as compared to other computer processes. Thus, contrary to Appellant's argument, the claims here are unlike those in *Trading Technologies* because Appellant's claims do not recite a graphical user interface. In addition, as discussed *supra*, Appellant has not provided persuasive evidence or technical reasoning that the method of claim 1 produces an advance in efficiency or technological improvement to the computer data processing system.

Thus, we see nothing in the limitations of claim 1, considered "both individually and as an ordered combination," that transforms the claimed abstract idea into patent-eligible subject matter.

Accordingly, for the reasons discussed above, we sustain the Examiner's rejection of claim 1 under § 101. For the same reasons, we sustain the rejection of independent claim 11, and dependent claims 2–10 and 12–21, which are not separately argued.

Rejection of Claims 1–21 Under § 112, First Paragraph

The Examiner finds there is no definition of a "numerical value" in the Specification, and "the references to value all refer to a best-bid-offer (BBO) value which is much more narrow than a numerical value." Final Act. 3; Ans. 30. The Examiner also determines the terms "data message type identifier" and "specified data message type identifier" are not defined in the Specification. Final Act. 3–4. The Examiner further finds the term "dynamically determined numerical value" is not defined in the Specification, and there is no apparent possession of the "dynamically calculated numerical value." Final Act. 4; Ans. 31.

We are persuaded by Appellant's arguments that the Examiner erred,[11] except with respect to the limitation of "dynamically calculated numerical value." Appellant provides a detailed and complete response to the Examiner's rejection setting forth the portions of the Specification and drawings supporting the claim terms "numerical value," "data message type

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[11] We are not, however, persuaded by Appellant's argument that the rejection fails to set forth a prima facie case because the Examiner provided adequate explanation of the rejection under § 112, first paragraph, to satisfy the notice requirement of 35 U.S.C. § 132.

identifier," "specified data message type identifier," and "dynamically determined numerical value." *See* App. Br. 13–18. For the reasons argued by Appellant, we find the Specification reasonably conveys to those of ordinary skill in the art that the inventor had possession of these claim limitations as of the filing date. *See Ariad Pharms., Inc. v. Eli Lilly & Co.,* 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

In regard to the "dynamically calculated numerical value" limitation in claim 1, which is not recited in independent claim 11, Appellant initially argued "there is no requirement in the claims for a method of dynamic calculation," as set forth in the Final Office Action. S*ee* App. Br. 18. Subsequently, Appellant argued the limitation was a typographical error and should read "the dynamically determined numerical value." Reply Br. 3. Appellant also stated this "minor typographic error" would be corrected after completion of this appeal. Reply Br. 3. We agree with the Examiner that there is no support in the Specification for the "method and manner" in which a numerical value is calculated. *See* Ans. 31. We also note that the claimed dynamically "determined" numerical value is broader than, and does not support, the dynamically "calculated" numerical value. Thus, we find the Specification does not reasonably convey to those of ordinary skill in the art that the inventor had possession of the claimed "dynamically calculated numerical value" as recited in claim 1 as of the filing date. *See Ariad,* 598 F.3d at 1351.

Accordingly, we sustain the rejection of claim 1, as well as dependent claims 2–10, under § 112, first paragraph, but we do not sustain the rejection of claims 11–21 under § 112, first paragraph.

Rejection of Claims 1–21 Under § 112, Second Paragraph

The Examiner finds the claim 1 limitation "to be operated on" fails to distinguish the claims from the prior art and that it is unclear what the term "operating" actually means in the context of the claims. Final Act. 5–6; Ans. 31. The Examiner also finds the terms "numerical value," "message type identifier," and "specified data message type" are broad terms that render the claims unclear. Ans. 31.

We are persuaded by Appellant's arguments that the Examiner erred. First, Appellant argues, and we agree, the use of "to be operated on" in the preamble of claim 1 conveys that the claimed data messages are not just stored, but will be operated on. App. Br. 21. Appellant also argues, and we agree, the pending messages are "operated on" as set forth in the body of the claim. *Id.* at 22. Second, Appellant argues that merely because "numerical value," "message type identifier," and "specified data message type" are broad terms, as the Examiner finds, does not mean they are unclear. *Id.* We agree with Appellant because, as Appellant argues, "breadth is not to be equated with indefiniteness." Reply Br. 3 (citing *In re Miller*, 441 F.2d 689, 693 (CCPA 1971)). In addition, Appellant argues, and we agree, the term "specified" is used to refer to the data message type identifier of the incoming message. App. Br. 23. Thus, we agree with Appellant's argument that the claim terms at issue "clearly set forth the meets and bounds of the claimed subject matter." *Id.* at 23; *see In re Packard*, 751 F.3d 1307, 1313 (Fed. Cir. 2014) ("[C]laims are required to be cast in clear—as opposed to ambiguous, vague, indefinite–terms.").

Accordingly, we do not sustain the Examiner's rejection of claims 1–21 under § 112, second paragraph.

Rejection of Claims 1–21 Under § 103(a)

The issue raised by Appellant's arguments is whether the combination of Carone and Altius teaches or suggests for each determined participant identity parameter, determining "a collective time that pending data messages . . . have spent on at least one dynamically determined numerical value that is associated with the specified data message type identifier," as set forth in claim 1 and similarly recited in claim 11.[12] App. Br. 10–11. The Examiner finds that Altius teaches "time priority as a factor." Ans. 27–29 (citing Altius ¶¶ 26–28, 69, 72–74, 77, and 78, Figs. 3–6). The Examiner also finds these portions of Altius show that "time priority is based on which order came in first, thus the 'collective' time for the older order is established to be longer than the 'collective' time for the order that was sent at a later time." *Id.* at 29, 30.

We are persuaded by Appellant's arguments that the Examiner erred. Appellant argues, and we agree, the portions of Altius cited by the Examiner merely teach "tracking the individual amount of time that each electronic order has been pending and then using conventional price/time ordering." Reply Br. 2. Appellant also argues, and we agree, the claims require more than determining an amount of time a single data message has been in the order book because the claims require "determining a 'collective time' for a group or multiple pending data message*s.*" *Id.*; *see also* App. Br. 12. Thus,

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[12] We agree with Appellant that claim 11 similarly recites determining "a collective time that pending data messages have spent" because claim 11 recites "determine . . . a time that pending data messages with the determined . . . parameter and the specified . . . identifier have spent on a dynamically determined numerical value for said specified . . . identifier." *See* App. Br. 27 (Claims App'x).

we agree with Appellant's argument that Altius does not teach or suggest determining "a collective time that pending data messages . . . have spent on at least one dynamically determined numerical value that is associated with the specified data message type identifier," as recited in claim 1 and similarly recited in claim 11. Thus, we do not sustain the rejection of claims 1 and 11, and dependent claims 2–10 and 12–21, under § 103.

DECISION

We affirm the Examiner's rejection of claims 1–21 under 35 U.S.C. § 101.

We affirm the Examiner's rejection of claims 1–10, and reverse the Examiner's rejection of claims 11–21, under 35 U.S.C. § 112, first paragraph.

We reverse the Examiner's rejection of claims 1–21 under 35 U.S.C. § 112, second paragraph.

We reverse the Examiner's rejection of claims 1–21 under 35 U.S.C. § 103(a).

Because we affirm at least one ground of rejection for each claim on appeal, we affirm the Examiner's decision to reject all of the claims on appeal. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv)(2016).

AFFIRMED