

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MIAMI INTERNATIONAL HOLDINGS, INC., MIAMI INTERNATIONAL
SECURITIES EXCHANGE, LLC, MIAX PEARL, LLC, and MIAMI
INTERNATIONAL TECHNOLOGIES, LLC,
Petitioner,

v.

NASDAQ, INC.,
Patent Owner.

Case CBM2018-00029
Patent 7,747,506 B2

Before TONI R. SCHEINER, MEREDITH C. PETRAVICK, and
KRISTIL R. SAWERT, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 328(a)

I. INTRODUCTION

Miami International Holdings, Inc., Miami International Securities Exchange, LLC, MIAX PEARL, LLC, and Miami International Technologies, LLC (collectively, “Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting a covered business method (“CBM”) patent review of claims 1–38 of U.S. Patent No. 7,747,506 B2 (Ex. 1001, “the ’506 patent”) under Section 18 of the Leahy-Smith America Invents Act (“AIA”).

Petitioner contends that the challenged claims are unpatentable based on the following ground:

Claims	Statutory Basis	Ground
1–38	§ 101	for being directed to patent ineligible subject matter
1–38	§ 112 ¹	for failing to satisfy the written description requirement

Pet. 15.

Nasdaq, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). On October 5, 2018, we instituted trial. Paper 10 (“Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 29; “PO Resp.”), Petitioner filed a Reply to Patent Owner’s Response (Paper 39; “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 43; “PO Sur-reply”).

Oral argument was held on July 18, 2019. Paper 51 (“Tr.”).

Based on the complete record, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that the ’506 patent is eligible for covered business method patent review, and that claims 1–38 are

¹ We refer to the pre-AIA version of 35 U.S.C. § 112 because the ’506 patent was filed prior to the effective date of the AIA, which amended this section.

unpatentable under 35 U.S.C. § 101 as patent ineligible subject matter. Petitioner fails to meet its burden of showing, by a preponderance of the evidence, that claims 1–38 are unpatentable under 35 U.S.C. § 112 for failing to meet the written description requirement.

II. RELATED MATTER

Petitioner and Patent Owner inform us that the '506 patent is the subject of *Nasdaq, Inc. et al. v. Miami International Holdings, Inc. et al.*, Case No. 3:17-cv-06664, filed September 1, 2017 in the District of New Jersey. Pet. 14–15; Paper 5, 1 (Patent Owner's Mandatory Notices); Ex. 1020.

III. THE '506 PATENT

The '506 patent is titled “Recipient Status Indicator System and Method” and issued on June 29, 2010. Ex. 1001, (54), (45). The '506 patent issued from Application No. 10/301,806, which claims priority to provisional applications Nos. 60/385,979 and 60/385,988, both filed on June 5, 2002. *Id.* at (60).

The '506 patent discloses a computerized trading system that processes trades in the form of attributable security interest messages. *Id.* at 2:60–62. Figure 1 of the '506 patent is reproduced below.

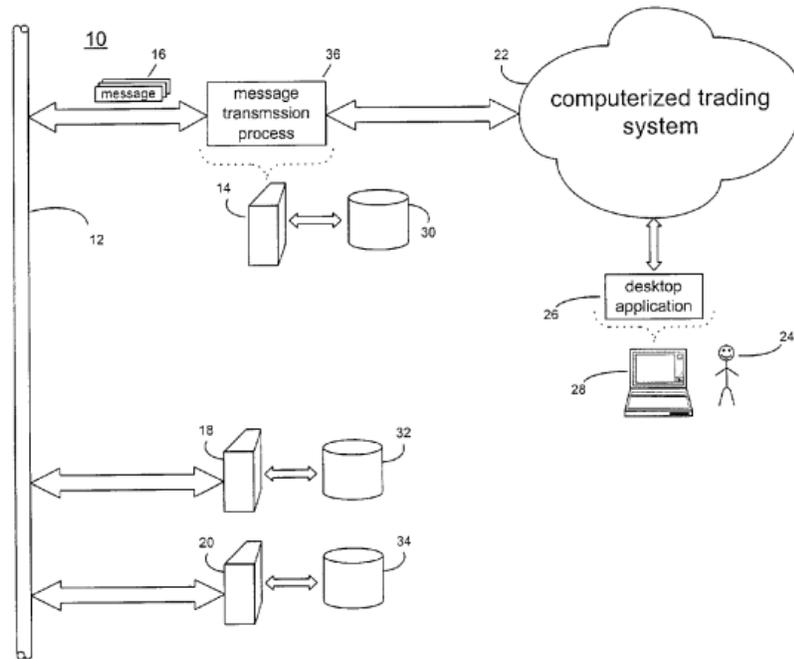


Fig. 1

Figure 1 depicts network 12 including broadcast server 14, primary intended recipient 18, and backup intended recipient 20. *Id.* at 2:30–32. Broadcast server 14 transmits security interest messages 16 from market participants 24, across network 12, to primary intended recipient 18. *Id.* at 2:48–62. Primary intended recipient 18 is a server providing downstream publishing services, such as message streaming or message retrieval. *Id.* at 4:48–53.

Primary intended recipient 18 continuously transmits primary indicator signal 52 back to broadcast server 14. *Id.* at 3:39–49. Primary indicator signal 52 identifies the primary intended recipient and indicates whether primary intended recipient 18 is operating properly on the network. *Id.* at 3:22–34. Primary intended recipient 18 will not transmit primary indicator signal 52 to broadcast server 14 if it fails or is otherwise removed from network 12. *Id.* After a defined failure period in which broadcast server 14 does not receive a primary indicator

signal 52, broadcast server 14 determines that primary intended recipient 18 is offline and redirects security interest messages 16 to backup intended recipient 20.
Id. at 4:3–42.

IV. ILLUSTRATIVE CLAIM

Claims 1, 6, 15, 21, 26, and 35 of the '506 patent are independent. Claims 1, 6, 15, and 21 recite systems, claim 26 recites a corresponding method, and claim 35 recites a corresponding computer program product. Claims 2–5 depend from claim 1, claims 7–14 depend from claim 6, claims 16–20 depend from claim 15, claims 22–25 depend from claim 21, claims 27–34 depend from claim 26, and claims 36–38 depend from claim 35.

Claim 26, reproduced below, is illustrative of the subject at issue.

26. A computer implemented method comprising:

transmitting attributable security interest messages, over a network, to a primary intended recipient system;

repeatedly and sequentially broadcasting, over the network, an indicator signal generated by the primary intended recipient system independently of the receipt of the attributable security interest messages, the indicator signal comprising an identification of the primary intended recipient system that is broadcasting the signal;

receiving, from the network, the indicator signal broadcast by the primary intended recipient system; and

determining that the primary intended recipient system is offline whenever the indicator signal is not received from the primary intended recipient system for a defined failure period.

Ex. 1001, 10:41–55.

V. CLAIM CONSTRUCTION

We interpret claims in an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.300(b) (2016).² Under this standard, we interpret claim terms using “the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997); *see In re Smith Int’l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (“[The] broadest reasonable interpretation . . . is an interpretation that corresponds with what and how the inventor describes his invention in the specification. . . .”). “Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history.” *Trivascular, Inc. v. Sammuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016).

Petitioner proposes construing the claim terms “system” as “an electronic system for trading securities,” and “security interest message” as “message[s] relating to electronic securities trading.” Pet. 16–17. In its Preliminary Response, Patent Owner stated, “[f]or the purpose of this [Patent Owner’s Preliminary Response, Patent Owner] does not believe that these terms or any other terms in

² The Petition in this proceeding was filed on March 27, 2018, prior to the effective date of the rule change that replaces the broadest reasonable interpretation standard with the federal court claim interpretation standard. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51,340, 51,340 (Oct. 11, 2018) (“This rule is effective on November 13, 2018 and applies to all IPR, PGR and CBM petitions filed on or after the effective date.”).

the '506 patent need to be construed to resolve the CBM eligibility, §§ 101 or 112 issues herein.” Prelim. Resp. 14. In its PO Response, Patent Owner argues that Petitioner’s construction of “attributable security interest message” is unduly narrow and proposes an alternate construction. PO Resp. 13–15.

We determine that only the term “attributable security interest message” needs construction in order to resolve the issues before us. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (stating that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”).

attributable securities interest message

Petitioner contends that we should construe “attributable securities interest message” to mean “a message relating to electronic securities trading.” Pet. 17; *see also* Pet. Reply 2. Petitioner bases their construction on the '506 patent’s disclosure that messages 16 are trades. *See* Pet 17 (quoting Ex. 1001, 2:60–62).

Patent Owner responds that the '506 patent only discloses trades as an example of attributable securities interest messages and that we should more broadly construe it to mean “a message relating to a security interest.” PO Resp. 13–15; *see also* PO Sur-reply 5–7. Patent Owner argues, “[t]he term only needs to relate to a ‘security interest,’ not to trading of that security interest specifically.” PO Resp. 14. Patent Owner states:

The term covers a wide range of data, such as last sale information, best bid or offer information, public customer interest, logging data, security public-key encryption data, and even IP transaction data, *so long as it relates to an electronic platform involved in security trading.*

Id. at 17 (emphasis added). Patent Owner bases its construction on the testimony of its expert Mr. Peter U. Vinella. *See* PO Resp. 15 (citing Ex. 2004 ¶¶ 75–78).

Mr. Vinella testifies:

The claimed “attributable security interest message” can cover a wide range of data, such as last sale information, best bid or offer information, public customer interest, logging data, security public-key encryption data, and even IP transaction data, *so long as it relates to a security interest (i.e. an order or a quote)*, but it does not have to strictly be a security interest.

Ex. 2004 ¶ 77 (emphasis added).

The parties’ proposed constructions are more similar than they are different. Both constructions are similar in that the message must include information related to a security interest and not just any type of information. The plain language of the claims, which recites that the message is a “security interest” message, requires this. Both parties also agree that attributable securities interest messages relate in some manner to securities trading or a securities trading platform. Both parties acknowledge that, consistent with the disclosure of the ’506 patent, an attributable securities message at least encompasses an embodiment where the message is a securities trade. The ’506 patent explicitly discloses, “attributable security interest messages (e.g., messages 16)” are “trades (which are in the form of messages 16) entered by various market participants.” Ex. 1001, 2:48–63.

The parties’ proposed constructions are different in how broadly the messages relate to the security interest. Petitioner’s proposed construction specifies that the message relates specifically to securities trading, and Patent Owner’s proposed construction more broadly relates the message to the security interest, itself.

We need not resolve the difference between the parties’ proposed constructions, because as explained in the analysis below, we need only construe the term attributable security interest message to the extent that it at least requires a message that relates to a security interest and encompasses at least a message that is a security trade order. *See Vivid Techs.*, 200 F.3d at 803.

VI. COVERED BUSINESS METHOD PATENT REVIEW ELIGIBILITY

Section 18 of the AIA provides that

the term “covered business method patent” means a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.

AIA § 18(d)(1); *see also* 37 C.F.R. § 42.301(a) (concerning the same). A patent need have only one claim directed to a covered business method to be eligible for review. *See* Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention; Final Rule, 77 Fed. Reg. 48,734, 48,736 (Aug. 14, 2012) (“Final Rule”). Thus, we must “examine the claims when deciding whether a patent is a CBM patent.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1340 (Fed. Cir. 2016) (emphasis omitted).

In our Institution Decision, we determined that Petitioner’s evidence and analysis demonstrated that the ’506 patent was eligible for CBM patent review. Inst. Dec. 8–14. For the reasons discussed below, Patent Owner’s arguments and evidence apprises us of no sufficient reason to alter our determination. As we did in our Institution Decision, we take claim 26 as representative.

Standing

Section 18(a)(1)(B) of the AIA requires that Petitioner, or its real party in interest or privy, “has been sued for infringement of the patent.” Petitioner asserts that it was sued for infringement of the ’506 patent in *Nasdaq, Inc. v. Miami International Holdings, Inc.*, Case No. 3:17-cv-006664 in the District of New Jersey. Pet. 14–15; Ex. 1020. Patent Owner does not dispute that it has sued Petitioner. *See* Paper 5, 1. Accordingly, Petitioner has standing to file its Petition.

A method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service

The AIA defines a CBM patent as “[a] patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service.” AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A CBM patent can be interpreted broadly to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso*, 815 F.3d at 1338–41 (determining that a patent was a covered business method patent because it claimed activities that are financial in nature); *Unwired Planet, LLC v. Google, Inc.*, 841 F.3d 1376, n.5 (Fed. Cir. 2016) (stating, “we endorsed the ‘financial in nature’ portion of the standard as consistent with the statutory definition of ‘covered business method patent’ in *Blue Calypso*”), *Versata Devel. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) (“[The statute] on its face covers a wide range of finance-related activities.”).

Petitioner contends, “[t]he Challenged Claims relate to activities that are financial in nature, trading securities over a computerized system,” because all the challenged claims “recite a ‘security interest message’ which is a message relating to electronic securities trading.” Pet. 7. For example, claim 26 recites a method comprising transmitting attributable security interest messages. *Id.* at 9 (citing Ex. 1001, 10:41–55). Petitioner further points to dependent claims 10 and 30, which recite, “the defined transmission period is a trading day.” Pet. Reply 4; Ex. 1001, 8:31–32; 10:64–65.

Citing *Unwired Planet*, Patent Owner argues, “[p]atents claiming technology that is merely well-suited for *use* in a financial environment, such as a bank vault, are not CBM eligible.” PO Resp. 16 (citing *Unwired Planet*, 841 F.3d at 1328). Patent Owner asserts “[h]ere, the claims are not directed to actives that are financial in nature, they describe failure detection, redundancy, and disaster recovery in a distributed computer system” and “recite no ‘practice, administration, or management of a financial product or service’.” PO Resp. 16–17. Patent Owner argues that “the claims only tangentially reference electronic securities in the context of what data is received” and the claimed invention “does not become a CBM patent simply because it is suited for use with recipients that receive information regarding securities, such as a security interest message.” *Id.* at 18–19.

Patent Owner’s argument is not persuasive. As the Court recently explained in *SIPCO*, the definition of a CBM is not limited to products and services of only the financial industry, or to patents owned by or directly affecting the activities of financial institutions such as banks and brokerage houses. *See SIPCO, LLC v. Emerson Elec. Co.*, No. 2018-1635, slip op. 13 (Fed. Cir. Sept. 25, 2019) (citing *Versata*, 793 F.3d at 1325). “[O]n its face covers a wide range of finance-related activities.” *Versata*, 793 F.3d at 1325. The claimed method need only be “used in” the practice, administration, or management of a financial product or service. *See* AIA § 18(d)(1); 37 C.F.R. § 42.301(a).

In *SIPCO*, the court determined that a patent was a CBM patent because, although an independent claim broadly recited a device for communicating information, dependent claims recited remote devices associated with an ATM or vending machine. *SIPCO*, 2018-1635, slip op. at 14–15. The Court noted: “The patent expressly contemplates that the information communicated through the

claimed system is financial information that identifies the user's bank account and the user's identity." *Id.*

Like in *SIPCO*, claim 26 of the '506 patent recites a method that transmits information and explicitly recites that the information is an "attributable security interest message." Ex. 1001, 10:41–55. Above, we construe attributable security interest message to require at least a message that relates to a security interest and to encompass at least a message that is a security trade order. A securities interest is a financial product and trading a security is a financial activity. Also like in *SIPCO*, the '506 patent explicitly contemplates that the attributable security interest message is a trade order entered by electronic market participants into a computerized trading system. Ex. 1001, 2:60–63; *see also id.* at 1:13–15 ("This invention relates to electronic-based securities trading, and more particularly to processing and displaying of information relating to electronic securities trading.").

In *Unwired Planet*, the court determined that patents that were merely "incidental to" or "complementary to" a financial activity or service or product sales were not CBM patents. *Unwired Planet*, 81 F.3d at 1378–79. For example, "[t]he patent for a novel lightbulb that is found to work particularly well in bank vaults does not become a CBM patent because of its incidental or complementary use in banks." *Id.* at 1382. Nor is a patent for "digging ditches" subject to CBM review simply because the dirt can subsequently be sold. *Id.* Here, the claims are unlike the examples in *Unwired Planet* in that the claims explicitly recite transmitting messages related to a security interest and, thus explicitly recite processing or other operations *used in* the practice, administration, or management of a financial product or service. The '506 patent expressly contemplates that the attributable security interest message is a trade order entered in a computerized trading system. Ex. 1001, 2:60–63. We note that dependent claim 30 further links

the method of claim 26 to securities trading. Claim 30 explicitly recites, “the defined transmission period is a trading day.” *See* Ex. 1001, 10:64–65.

We determine that Petitioner has shown by a preponderance of the evidence that the ’506 patent, which explicitly claims an “attributable security interest messages” and a “trading day” is a CBM patent.

Not for a technological invention

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only “technological invention[s],” as defined by 37 C.F.R. §42.301(b). The definition of “covered business method patent” in § 18(d)(1) of the AIA does not include patents for “technological inventions.”

To determine whether a patent is for a technological invention, we consider the following: “whether the claimed subject matter as a whole [(1)] recites a technological feature that is novel and unobvious over the prior art; and [(2)] solves a technical problem using a technical solution.” 37 C.F.R. § 42.301(b). Both prongs must be satisfied in order to exclude the patent as a technological invention. *See Versata*, 793 F.3d at 1326–7; *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). The following claim-drafting techniques typically do not render a patent a “technological invention”:

- (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.
- (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.
- (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012). The Federal Circuit has held that a claim does not include a “technological feature” if its “elements are nothing more than general computer system components used to carry out the claimed process.” *Blue Calypso*, 815 F.3d at 1341; *see also Versata*, 793 F.3d at 1327 (“the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention”).

Petitioner and Patent Owner dispute whether the claims of the ’506 patent (1) recite a technological feature that is novel and unobvious over the prior art; and (2) solves a technical problem using a technical solution. Pet. 11–14; PO Resp. 20–32; Pet. Reply 7–11; PO Sur-reply 7–9.

First Prong

Petitioner contends that none of the ’506 patent claims recite a novel and nonobvious technological feature because the claims, including claim 26, merely recite conventional components used in a conventional manner. Pet. 11 (“At least claims 1, 6, 15, 21, 26 and 35 do not satisfy either prong—let alone both.”); *see id.* at 11–14. In particular, Petitioner asserts that monitoring for an indicator signal, that is repeatedly and sequentially broadcasted by a primary intended recipient system, to determine that the primary intended recipient system is offline whenever the indicator signal is not received for a defined failure period requires nothing more than a well-known, conventional “keep alive message” or a “heartbeat” system. *See* Pet. 56–65 (citing Ex. 1021 ¶¶ 22, 69, 77–98, 102).

Patent Owner disagrees and argues that Petitioner fails to address the claims as a whole by only addressing certain elements of the claims. PO Resp. 21–26. According to Patent Owner,

[t]he claims recite that the hardware components are configured to perform particular functions that MIAX doesn't content lack novelty and were obvious over the prior art. (*See* Petition 11.) These functions are "technological." Therefore, here, the claimed 'subject matter *as a whole recites* a technological features that is novel and unobvious over the prior art." (*Id.*).

PO Resp. 23. Patent Owner argues that Petitioner has not sufficiently shown that all of the functional recitations are novel and unobvious. *Id.* at 21–26. According to Patent Owner, merely reciting that a computer is performing a process (i.e., embodied in a set of software instructions) would mean that the computer is a technological feature. *See* PO Resp. 22 ("Instead, the question has to be whether the particular processor, main memory, computer readable medium, and any recited function and/or features as arranged in the claim are novel, nonobvious, and technological."). In other words, Patent Owner argues that all functional recitations are necessarily require to be considered technological features for the purpose of CBM patent review eligibility and Petitioner, thus, must demonstrate that the entirety of claim 1, including any functional recitations, are novel and unobvious.

Patent Owner's argument is misplaced because not all functional recitations are technological features for the purpose of CBM patent review eligibility. Contrary to Patent Owner's argument, to determine whether a patent is for a technological invention, we consider the following: "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art." 37 C.F.R. § 42.301(b). A patent "typically" does not cover a "technological invention" if it recites "the use of known prior art technology to accomplish a process or method, *even if that process or method is novel and non-obvious.*" Office Patent Trial Practice Guide, 77 Fed. Reg. at 48,763–64 (emphasis added). Further, "[m]ere recitation of known technologies, such as computer

hardware, communication or computer networks, software, memory, computer-readable storage medium, . . . or specialized machines, such as an ATM or point of sale device” to not render an invention for a technological invention.” *Id.* Merely performing actions by computers does not make an invention technical. *Blue Calypso*, 815 F.3d at 1341; *see also Versata*, 793 F.3d at 1327.

In any event, many of Patent Owner’s alleged novel and unobvious technical features are not recited by claim 26. *See* 77 Fed. Reg. at 48,736 (“A patent need have only one claim directed to a covered business method to be eligible for review.”). Claim 26 does not recite a broadcast server having a processor, main memory, or computer readable medium. *See* Ex. 1001, 10:41–55.

Claim 26 recites a process having four steps: (1) “transmitting attributable security interest messages . . . to a primary intended recipient system;” (2) “repeatedly and sequentially broadcasting . . . an indicator signal generated by the primary intended recipient system independently of the receipt of the attributable security interest messages, the indicator signal comprising an identification of the primary intended recipient system that is broadcasting the signal;” (3) “receiving . . . the indicator signal broadcast by the primary intended recipient system;” and (4) “determining that the primary intended recipient system is offline whenever the indicator signal is not received from the primary intended recipient system for a defined failure period.” *Id.* To accomplish the process, claim 26 broadly recites that the method is “computer implemented,” a primary intended recipient system, and a network over which attributable security interest messages are transmitted and indicator signals are received. *Id.* Transmitting, receiving, and processing messages and signal (i.e., data) are well-known and conventional computer activities. *See* Ex. 1021 ¶¶ 68–69.

Consistent with the claim, the '506 patent does not disclose any particular or specialized computer system for performing the claimed process. *See generally* Ex. 1001. The '506 patent discloses conventional computer components performing these activities. *See id.* at 2:53–57, 7:12–15; Ex. 1021 ¶¶ 99–103 (testimony of Dr. Paul Min). In particular, the '506 system states that

[t]he recipient status indicator system may be implemented with memory devices in microcontrollers, *general purpose microprocessors*, digital signal processors (DSPs), reduced instruction-set computing (RISC), and complex instruction-set computing (CISC), among other electronic components.

Id. at 7:12–15 (emphasis added). The '506 patent, thus, indicates that the use of computers and a network to implement the system is not a novel or technological feature.

Further, Petitioner's expert Dr. Paul Min testifies, “[t]he ['506 patent's] communication system is in the form of a client-server communication system and the repeatedly and sequentially broadcast signal is known as a ‘heartbeat’ in the communications industry” and that the use of “heartbeat” is a well-known, convention feature in communication systems. Ex. 1021 ¶¶ 22, 69, 77–98, 102. Dr. Min points to ample evidence to demonstrate that all possible technological features of claim 26 are not novel or unobvious. *See id.* ¶ 77–98 (discussing Exs. 1009–1018).

Accordingly, we determined that Petitioner's analysis and evidence sufficiently shows that all possible technological features, individually or as a whole, recited by claim 26 are not novel and unobvious. Because both prongs must be satisfied for a patent to be excluded from CBM patent review for being a technological invention, we determine that the '506 patent is not for a technological invention based on this prong alone.

Second Prong

Nonetheless, we also determine that the Petition's evidence and analysis sufficiently demonstrates that the '506 patent is not for a technological invention because the claimed subject matter as a whole does not solve a technical problem using a technical solution.

Petitioner contends:

The Challenged Claims do not address a technical problem using a technical solution either. First, the specification does not even purport that the '506 Patent addresses or solves any particular problem. To the extent that any problem existed at all, it was having knowledge of the online-offline status of a primary intended recipient, so that a security interest message could be redirected to a backup recipient. This problem is hardly a technical one. Indeed, an investor who calls her primary broker to trade a security would redirect her call to another broker if the primary broker did not answer the telephone. Automating a process that reroutes a security interest message from a primary intended recipient to a backup recipient when the primary is not available is not a technological solution to a technological problem. Moreover, monitoring the non-existence of a signal is not a technical solution.

Pet. 14; According to Petitioner, “[t]he basic concept of determining the availability of an indicator signal so that messages can be delivered to a backup when the primary recipient is “offline” is found outside the computer-realm. Pet. Reply 10 (citing Ex. 1021 ¶ 41, Ex. 1044 ¶ 155–162, Ex. 1057).

Patent Owner responds that “the lack of knowledge about whether a computing device is online or offline to route to an alternate computing device is a problem that is only found in distributed networks, and is thus technical” and “providing a device that monitors for a signal, or lack thereof, to make a determination as to availability is a technical solution.” PO Resp. 27; *see also* PO Sur-reply 7–9. Patent Owner further argues that the prosecution history shows that the claimed invention is a technical solution to a technical problem because the

examiner determined that the Talluri reference (Ex. 1003) did not describe or disclose a primary intended recipient system broadcasting the indicator signal. PO Resp. 28– 32.

We agree with Petitioner. The claims do not recite a technical solution to a technical problem. Ensuring that a recipient receives messages, in particular, a message related to a security interest or a trade order, by redirecting messages to a back-up recipient is a business problem. *See* Ex. 1021 ¶ 45; Ex. 1044 ¶ 155–162; Ex. 1057.³ Contrary to Petitioner’s argument, reliable message delivery is not just a problem that exists in the computer realm. *See id.* This is consistent with the ’506 patent’s disclosure that the advantage of its system include monitoring the status of the primary intended recipient and in the event of failure, redirecting messages to backup recipients. Ex. 1001, 2:15.

Petitioner also persuaded us that the claimed solution to the business problem of reliable message delivery is not a technical solution. Pet. Reply 10–11. As discussed above with respect to the first prong, using a heartbeat signal to determine when a system is online or offline is well-known and conventional. A patent “typically” does not cover a “technological invention” if it recites “the use of known prior art technology to accomplish a process or method.” 77 Fed. Reg. at 48764.

³ Patent Owner contends that we should give no weight to Dr. Min’s Supplemental Declaration because it is allegedly outside the scope of reply. PO Sur-Reply 3. We do not agree. A petitioner may submit directly responsive rebuttal evidence. Trial Practice Guide Update, 14 (August 2018) (citing *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1077–78 (Fed. Cir. 2015)). Here, Dr. Min’s testimony rebuts Patent Owner’s arguments made in the Patent Owner’s Response (*see, e.g.*, PO Resp. 4, 34, 35–36) and Patent Owner has opportunity to address Dr. Min’s testimony in their Sur-reply.

Patent Owner does not persuade us that the claims recites a technical solution to a technical problem. Patent Owner argues that the claims recite a technical solution to a technical problem that existed with systems that uses receipt of an acknowledgement message to detect when a system is online or offline. *See* PO Resp. 28– 32. Patent Owner’s argument concentrates on the differences between the claimed invention and one particular reference, Talluri. *See id.* (discussing Ex. 1003). It does not account for the other ample evidence of record that shows that the use of a heartbeat signal is a well-known, convention feature in communication systems. *See* Ex. 1021 ¶¶ 77–98 (discussing Exs. 1009–1018). Likewise, Mr. Vinella’s testimony is unpersuasive because it is directed to the differences between the claimed invention and an acknowledgement message system and does not account for the known heartbeat signal systems. *See* Ex. 2004 ¶¶ 79 –88, 107–112.

Accordingly, we also determine that the ’506 patent is not for a technological invention based on the second prong alone. Because both prongs must be satisfied for a patent to be excluded from covered business method patent review for being a technological invention and the ’506 patent satisfies neither prong, the ’506 patent is not for a technological invention.

Conclusion for CBM Eligibility

Petitioner has been sued for infringement of the ’506 patent. Petitioner has demonstrated by a preponderance of the evidence that at least one claim of the ’506 patent recites a method for performing data processing or other operations used in the practice, administration, or management of a financial product (i.e., a securities interest) or service (i.e., securities trading) and does not recite a technological invention. Accordingly, we find that the ’506 patent is eligible for CBM patent review.

VII. 35 U.S.C. § 101—PATENT ELIGIBILITY

A claimed invention is patent-eligible if it is a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014).

In determining whether a claim falls within the excluded category of abstract ideas, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 76–79 (2012)). In accordance with that framework, we first determine whether the claim is “directed to” a patent-ineligible abstract idea. *See Alice*, 134 S. Ct. at 2356 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”). *See also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in [P]etitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Examples of concepts that constitute patent-ineligible abstract ideas include fundamental economic practices (*Alice*, 134 S. Ct. at 2357; *Bilski*, 561 U.S. at 611), mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)), and basic tools of scientific and technological work (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Examples of concepts that constitute patent eligible subject matter include physical and chemical processes, such as curing rubber (*Diamond v. Diehr*, 450 U.S. 175, 184 n.7 (1981)) and “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores,” and a process for manufacturing flour (*Benson*, 409 U.S. at 69).

If the claim is “directed to” a patent-ineligible abstract idea, we turn to the second step of the *Alice* and *Mayo* framework and consider the elements of the claim, both individually and as an ordered combination, to determine whether the additional elements transform the nature of the claim into a patent-eligible application of the abstract idea. *Alice*, 134 S. Ct. at 2355. This second step is a search for an “inventive concept”—an element or combination of elements sufficient to ensure that the claim amounts to “significantly more” than the abstract idea itself. *Id.*

The PTO recently published revised guidance on the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Revised Guidance”). Under the Guidance, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

- (3) adds a specific element beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or
- (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See 2019 Revised Guidance, 84 Fed. Reg. 50–56.

As we did in the Institution Decision, we take method claim 26 as representative of independent claims 1, 6, 15, 21, 26, and 35. *See* Pet. 22–28

(explaining in detail, for each independent claim, how the independent claims is directed to the same abstract idea).

We note that, unlike the other independent claims, claims 15 and 21 recites a broadcast server is configured to transmit the attributable security interest message to not only the primary intended recipient system but also to backup intended recipient systems. *See* Ex. 1001, 9:1–23, 9:64–10:19. Like the other independent claims, however, claims 15 and 21 do not recite redirecting attributable security interest messages to backup intended recipient systems, in response to a determination that the primary intended recipient is offline. *Id.* That is recited by claims 18 and 24, which dependent from claims 15 and 21 respectively. *Id.* at 9:31–28, 10:24–31. That the broadcast server is configured to transmit the attributable security interest message to not only the primary intended recipient system but also to backup intended recipient systems makes no difference in our analysis of the independent claims as a group.

Judicial Exception

In accordance with the first step of the Alice framework, we determine whether the claim is “directed to” a patent-ineligible abstract idea. To determine whether claim 1 provides an inventive concept, we consider (1) whether the claim recites a judicial exception, such as an abstract idea and (2) whether the recited judicial exception is integrated into a practical application of the judicial exception. 2019 Revised Guidance, 84 Fed. Reg. at 53.

Abstract Idea

Petitioner contends that the claims are directed to the “concept of monitoring receipt of an indicator signal from a recipient to determine the availability of the recipient (i.e., online or offline) to transmit or receive information associated with

the trading of financial instruments,” which falls within the category of certain method of organizing human activity abstract ideas. Pet. 42; Pet. Reply 12, 23.

We agree with Petitioner that the claimed combination of elements recite the concept of monitoring receipt of an indicator signal from a recipient to determine the availability of the recipient (i.e., online or offline) to transmit or receive information, in particular an attributable security interest message. In particular, claim 26 recites:

transmitting attributable security interest messages, . . . ,
to a primary intended recipient system;

repeatedly and sequentially broadcasting, . . . , an indicator
signal generated by the primary intended recipient
system independently of the receipt of the attributable
security interest messages, the indicator signal
comprising an identification of the primary intended
recipient system that is broadcasting the signal;

receiving, . . . , the indicator signal broadcast by the primary
intended recipient system; and

determining that the primary intended recipient system is
offline whenever the indicator signal is not received
from the primary intended recipient system for a
defined failure period.

Ex. 1001, 10:42–55.

Monitoring receipt of an indicator signal from a recipient to determine the availability of the recipient (i.e., online or offline) in order to transmit or receive information associated, in particular an attributable security interest message, falls with the categories of abstract ideas of certain methods of organizing human activity, such as managing relationships or interactions between people. *See* 2019 Revised Guidance, 84 Fed. Reg. at 52; *see* Pet. 33, Pet. Reply 12–13, 23.

Patent Owner disputes that alleged ineligible concept is a method of organizing human activity and argues that Petitioner has failed to show a real-world analogy. PO Resp. 34–39 (citing *Data Engine Techs. v. Google*, 906 F.3d 999, 1011 (Fed. Cir. 2018) (“It is not enough, however, to merely trace the invention to some real-world analogy.”)). In essence, Patent Owner argues that because Petitioner fails to show that anyone has ever performed the claimed method, it is not abstract. *Id.* Patent Owner’s reliance on *Data Engine* is misplaced. Contrary to Patent Owner’s argument, in *Data Engine*, the court stated:

It is not enough, however, to merely trace the invention to some real-world analogy. The eligibility question is not whether anyone has ever used tabs to organize information. That question is reserved for §§ 102 and 103. The question of abstraction is whether the claim is “directed to” the abstract idea itself We must consider the claim as a whole to determine whether the claim is directed to an abstract idea or something more.

Data Engine, 906 F.3d 1011. “The abstract idea itself cannot supply the inventive concept, no matter how groundbreaking the advance.” *Trading Tech. Int’l, Inc. v. IBG LLC*, 921 F.3d 1084, 1093 (Fed. Cir. 2019) (quotation omitted).

Courts have found similar concepts to be abstract ideas. *See* Pet. 36 (citing *Two-Way Media v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017); Pet. Reply 12–13(citing numerous court decisions)). In *Two-Way Media*, the Federal Circuit determined that a claim reciting a method for routing information using result-based functional language directed to the abstract idea of “(1) sending information, (2) directing the sent information, (3) monitoring [the] receipt of the sent information and (4) accumulating records about [the] receipt of the sent information.” *Two-Way Media*, 874 F.3d at 1337; *see also Interval Licensing*, 896 F.3d at 1346 (Fed. Cir. 2018) (finding claims directed to displaying a second set of data without interfering with a first set of data to be abstract);

Intellectual Ventures I LLC v. Symantec Corp., 838 F.3d 1307, 1317 (Fed. Cir. 2016) (finding claims directed to classifying and routing of email messages to be abstract); *Secured Mail Sol's LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 911 (Fed. Cir. 2017) (finding claims directed to communicating information about a mail object by use of a marking to be abstract). The concepts recited in these cases are akin to the concept here.

We determine that Petitioner has shown by a preponderance of the evidence that the claims recite subject matter that falls within the categories of abstract ideas—certain methods of organizing human behavior, such as managing relationships or interactions between people.

Additional Elements that Integrate the Judicial Exception

We consider whether the claims integrate the judicial exception into a practical application “by: [a] Identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.” 2019 Revised Guidance, 84 Fed. Reg. at 54–55. Some exemplary considerations, including whether the additional elements reflect an improvement to the functioning of a computer or merely uses the computer as a tool to perform an abstract idea or uses the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment. *Id.*

Petitioner contend that the claims

do not specify any improvement in computer functionality. Instead, the claims speak to simple functions like “receiving” a signal, “determining” that a recipient is offline if a signal is not received—activities that are performed by conventional computer components, such as a server, processor and data bus.

Pet. 53. According to Petitioner “computers in claims of the ’506 Patent are invoked to carry out routine steps such as ‘receive,’ ‘determine,’ ‘transmit,’ which have been held to be directed to an abstract idea.” Pet. 54–55.

Patent Owner disagrees and contends that the additional elements “reflect[] an improvement to the functioning of a computer, or an improvement to other technology or technical field.” PO Res. 41. Patent Owner asserts that the use of an indicator signal is “more than a drafting effort designed to monopolize the judicial exception.” *Id.* Patent Owner further asserts that the indicator signal is independent of the receipt of an attributable securities interest message is an improvement in computer technology. *Id.* at 42. Patent Owner states: “The ability to monitor for the lack of indicator signals broadcast by a recipient of a security interest message to determine whether the recipient is offline is, on its face, an improvement in computer capability.” *Id.* at 43.

The term “additional elements” refers to features, elements, or steps that the claim recites beyond the abstract idea itself. 2019 Revised Guidance, 84 Fed. Reg. at 55 n.24. In addition to the abstract idea, claim 26 recites that the method is “computer implemented,” that the intended recipient system broadcasts the system over a network, and that the indicator signal broadcast is received over the network.

We agree with Petitioner that these additional elements do not integrate the abstract idea into practical application because they merely link the abstract idea to a general computerize technological environment or field of use. “[M]erely limiting the field of use of the abstract idea to a particular existing technological environment does not render the claims any less abstract.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016); 2019 Revised Guidance, 84 Fed. Reg. at 55.

The claims require no more than general computer components with general computer functionality, such as transmitting, receiving, and determining. *See* Ex. 1001, 6:44–7:23 (describing the method being implemented with general computer components). In other words, they merely use a computer as a tool to perform the abstract idea. *See id.* at 1:19–12:6 (claiming a computer program product that instructs a processor to perform the method of claim 26). The additional elements individually or in combination must do “more than simply stat[e] the [judicial exception] while adding the words ‘apply it.’” *Alice*, 134 S. Ct. at 2357 (internal quotation omitted).

Claim 26 recites the broadcasting of an indicator signal that is repeated, sequential, and independent of receipt of the attributable security interest messages. Ex. 1001, 10:41–55. Although these elements add a degree of particularity, they do not make the claim any less abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714–15 (Fed. Cir. 2014) (“Although certain additional elements, such as consulting an activity log, add a degree of particularity, the concept embodied by the majority of the elements describes only the abstract idea of showing an advertisement before delivering free content.”); *see also BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1286–1287 (Fed. Cir. 2018) (“the recitation of a database structure slightly more detailed than a generic database does not save the asserted claims.”).

Claim 26 additionally recites that “the indicator signal comprising an identification of the primary intended recipient system that is broadcasting the signal.” Ex. 1001, 10:41–55. This additional element is directed to the content of the indicator signal. However, “even if a process of collecting and analyzing information is ‘limited to particular content’ or a particular ‘source,’ that element does not make the collection and analysis other than abstract.” *SAP America, Inc.*

v. InvestPic LLC, 898 F.3d 1161, 1168 (Fed. Cir. 2018).

Unlike the claims in *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016), *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *Core Wireless Licensing SARL v. LG Electronics, Inc.*, 880 F.3d 1356 (Fed. Cir. 2018), *DDR Holdings, LLC v. Hotels.com L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), and *Data Engine*, the claims here are not directed to a specific improvement in the way the computer operates or to an unconventional technological solution to a technological problem. In *Enfish*, for example, the Federal Circuit formulated the step-one *Alice* inquiry as “whether the focus of the claims is on the specific asserted improvement in computer capabilities (i.e., the self-referential table for a computer database) or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish*, 822 F.3d at 1335–36 (quoting *Alice*, 134 S.Ct. at 2355, 2357–59). The Federal Circuit rejected a § 101 challenge because the claims “are directed to a specific improvement to the way computers operate, embodied in the self-referential table.” *Id.* at 1336; see *Electric Power Grp., LLC v Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (characterizing the claims in *Enfish* as improving how computers carry out the basic function of storage and retrieval of data). In *DDR Holdings*, the court determined that the invention was “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” and that the claimed invention did not simply use computers to serve a conventional business purpose. *DDR Holdings*, 773 F.3d at 1257. In *Data Engine*, the court found claims eligible because they recited “a specific structure (i.e., notebook tabs) within a particular spreadsheet display that performs a specific function (i.e., navigating within a three-dimensional spreadsheet).” *Data Engine Techs.*, 906 F.3d 999. The claims here are unlike the claims in these cases because

they do not recite a specific improvement in the way the computer operates or to an unconventional technological solution to a technological problem.

We, thus, are not persuaded that the claims are directed to an improvement in computer capabilities or integrate the abstract ideas into a practical application in any other meaningful way. Petitioner has shown by a preponderance of the evidence that the claims of the '506 patent are more likely than not directed to an abstract idea.

*Whether Any Additional Elements Recited are
“Well-Understood, Routine, Conventional”*

We “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent eligible application.” *Alice*, 134 S.Ct. at 2355 (quoting *Mayo*, 566 U.S. at 78–79). To determine whether claim 13 provides an inventive concept, we consider the additional elements, individually and in combination, to determine whether they (1) add a specific element beyond the judicial exception that is not “well-understood, routine, conventional” activity in the field or (2) simply append well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. 2019 Revised Guidance, 84 Fed. Reg. at 56.

Initially, we note that much of Patent Owner’s argument conflates the inventive concept inquiry (whether the additional elements beyond the abstract idea, viewed individually and as an ordered combination, are well understood, routine, and conventional) with an improper inquiry into the novelty of the claim as a whole. *See* PO Resp. 58–81. For example, Patent Owner argues that Petitioner fails to show that determining that the primary intended recipient system

is determined to be off-line whenever the indicator signal is not received for a defined failure period. *Id.* at 61–62.

“It has been clear since *Alice* that 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.” *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). “If a claim’s only ‘inventive concept’ is the application of an abstract idea using conventional and well-understood techniques, the claim has not been transformed into a patent-eligible application of an abstract idea.” *Id.* at 1290–91. “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.” *Diamond*, 450 U.S. at 188–89. A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent ineligible. *See Mayo*, 566 U.S. at 90. “The abstract idea itself cannot supply the inventive concept, no matter how groundbreaking the advance.” *Trading Tech.*, 921 F.3d at 1093 (quotation omitted).

In addition to the abstract idea, claim 26 recites that the method is “computer implemented,” that the intended recipient system broadcasts the system over a network, and that the indicator signal broadcast is received over the network. Petitioner contends, “[t]he computer-related elements of the claims here, are known generic computing components that do not add the requisite inventive concept sufficient to transform the abstract claims to something more.” Pet. 56–71.

We determine that Petitioner’s evidence and analysis demonstrates that the additional elements, individually and in combination, do not add significantly more to the abstract idea. In particular, the ’506 system states that “[t]he recipient status

indicator system may be implemented with . . . [a] *general purpose microprocessor*[].” *Id.* at 7:12–15. Dr. Min testifies that “[t]he [’506 patent’s] communication system is in the form of a client-server communication system and the repeatedly and sequentially broadcast signal is known as a ‘heartbeat’ in the communications industry,” and that the use of “heartbeat” is a well-known, conventional feature in communication systems. Ex. 1021 ¶¶ 22, 69, 77–98 (citing Exs. 1010–1019), 102. The conventionality of using a repeating, sequential, and independent indicator signal in a heartbeat system is also well-understood, conventional, and routine. *See* Ex. 1021 ¶¶ 75, 77–78; Pet. 56–70 (discussing Exs. 1010–1019); Ex. 1001, 2:53–59, 3:2–13.

Accordingly, Petitioner has shown sufficiently that the additional elements, individually or in combination, do not transform the nature of the claims into a patent-eligible application of the abstract idea. In other words, the additional elements do not add significantly more to the abstract idea.

Dependent Claims

According to Petitioner,

The dependent claims add nothing more significant to the abstract idea of the independent claims. *See, e.g., Bilski v. Kappos*, 130 S.Ct. 321 3231 (2010); *Alice*, 134 S.Ct. 2357. The dependent claims merely recite additional generalized steps using general purpose computer technology. The dependent claims . . . do not add additional features that would transform the abstract idea to something patentable because the other elements of the claims do not provide anything other than conventional and routine steps and technology.

Pet. 42–43; *see also* Pet. 43–52 (discussing the dependent claims in detail).

Patent Owner contends that the dependent claims recites particulars of what happens when the primary intended recipient is offline and asserts these recitations are a particular application that improves a computer system by redirecting and retransmitting to an alternate system. *See* PO Resp. 53–58.

We agree with Petitioner. For the reasons discussed below, the additional elements recited by the dependent claims not render them patent eligible.

Claim 27 additionally recites “wherein the defined failure period is a defined period of time,” and claim 28 recites “wherein the defined failure period is a defined number of non-received indicator signals.” Ex. 1001, 10:56–59. Claims 2, 3, 7, 8, 22, and 23 recite similar elements. Although these additional elements add a degree of particularity to the abstract idea, they do not make the claims any less abstract. *See Ultramercial*, 772 F.3d at 714–15; *see also* Ex. 1021 ¶¶ 75–76 (testimony of Dr. Min that the claims require nothing more than well-known routine computer components and activities).

Claim 33 additionally recites “repeatedly and sequentially broadcasting a backup indicator signal over then network independently of the receipt of the attributable security interest messages if the subsequent attributable security interest messages are redirected to the backup intended recipient system.” Ex. 1001, 11:8–13. Claims 13, 19, and 37 recite similar elements. These elements also add a degree of particularity to the abstract idea, but they do not make the claims any less abstract. *See Ultramercial*, 772 F.3d at 714–15.

Claim 29 additionally recites “wherein transmitting attributable security interest messages comprises storing the attributable security interest messages transmitted during a defined transmission period.” Claim 30 further recites “wherein the defined transmission period is a trading day,” and claim 31 recites “wherein transmitting attributable security interest messages includes organizing and assigning a unique identifier to each of the attributable security interest messages that were stored.” Ex. 1001, 10:60–11:2. Claims 9–11, 16, and 17 recite similar elements. These additional elements are mere data gather steps that add nothing more than extra-solution activity that is insufficient to transform the

claims into a patent-eligible application. *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011) (“We have held that mere ‘[data-gathering] step[s] cannot make an otherwise nonstatutory claim statutory’” (alterations in original) (quoting *In re Grams*, 888 F.2d 835, 840 (Fed. Cir. 1989)).); *see also* Revised Guidance, 84 Fed. Reg. at 55 (Identifying “add[ing] insignificant extra-solution activity to the” abstract idea as an example of when an abstract idea has not been integrated into a practical application.), *see also* Ex. 1021 ¶ 74 (testimony of Dr. Min that the claims require nothing more than well-known routine computer components and activities).

Claim 32 recites “effectuating the redirection of subsequent attributable security interest messages from the primary intended recipient system to a backup intended recipient system if it is determined that the primary intended recipient system is offline.” Ex. 1001, 11:3–7. Claims 4, 12, 18, 24, and 36 recite similar elements. These claims add the concept of redirection of attributable security interest messages to a back intended recipient system to the abstract idea of the independent claims. Like the independent claims, the additional concept falls with the categories of abstract ideas of certain methods of organizing human activity, such as managing relationships or interactions between people, and do not integrate the abstract idea into a practical application. Further, the additional concept is similar to concepts the court have found to be abstract ideas, as discusses above with respect to the independent claims. Adding one abstract idea to another abstract idea does not render a claim non-abstract. *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017); *see also FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1093—94 (Fed. Cir. 2016) (patent-ineligible claims were directed to a combination of abstract ideas). Further, these claims do not add significantly more to the abstract idea because they do not

require any further elements than those discussed above with respect to the independent claims. *See* Ex. 1021 ¶ 73 (testimony of Dr. Min that the claims require nothing more than well-known routine computer components and activities).

Claim 34 recites “determining which of the transmitted attributable security interest messages were received by the backup intended recipient system, wherein those messages that were not received by the backup intended recipient system are retransmitted.” Ex. 1001, 11:14–18. Claims 5, 14, 20, 25, and 38 recite similar elements. These claims add the concept of retransmitting attributable security interest messages to the backup intended recipient system if they were not received. This additional concept also falls with the categories of abstract ideas of certain methods of organizing human activity, such as managing relationships or interactions between people, and do not integrate the abstract idea into a practical application. Further, the additional concept is similar to concepts the court have found to be abstract ideas, as discusses above with respect to the independent claims. Adding one abstract idea to another abstract idea does not render a claim non-abstract. *RecogniCorp*, 855 F.3d at 1327 (Fed. Cir. 2017); *see also FairWarning*, 839 F.3d at 1093–94 (Fed. Cir. 2016). Further, these claims do not add significantly more to the abstract idea because they do not require any further elements than those discussed above with respect to the independent claims. *See* Ex. 1021 ¶ 73 (testimony of Dr. Min that the claims require nothing more than well-known routine computer components and activities).

Conclusion for Subject Matter Eligibility

Petitioner has shown by a preponderance of the evidence that claims 1–38 of the '506 patent more likely that not recite an abstract concept, and the generic computer components recited in those claims do not transform the claims into patent-eligible applications of that idea.

Other Arguments

We have considered the remainder of Patent Owner's arguments and evidence but find them unpersuasive.

Availability of Petitioner's Evidence as Prior Art

Patent Owner argues that Petitioner fails to show that Raman (Ex. 1009), Bhandari (Ex. 1013), Ionescu (Ex.1014), Aguilera (Ex. 1015), Shambroom (Ex. 1016), Stewart (Ex. 1017), and Chen (Ex. 1018) are prior art because none of the documents indicate when they were published or publically available. PO Resp. 66. Patent Owner, thus, contends that this evidence fails to show what was well-known and conventional as of the '506 patents filing date.

Patent Owner's argument in unpersuasive because it fails to account for Dr. Min's testimony. Dr. Min testifies that heartbeat systems were well-known, conventional features in communication systems and cites to these documents as a "sampling of references" to support his testimony as to what was "well understood, routine, and conventional long before the '506 Patent was filed." Ex. 1021 ¶¶ 77–98; *see also id.* ¶ 8 (providing citations to Exs. 1010–1019, including dates).

Weight to be Accorded to Expert Testimony

Generally, Petitioner and Patent Owner assert that its expert should be credited over the other. *See, e.g.*, PO Resp. 36; Pet. Reply 23–25. Each party then identifies various reasons for its positions, for example, inconsistencies in testimony during deposition. We have considered all such reasons, and adjusted the

weight to be accorded specific testimony from each expert in rendering our overall decision. In general, we did not find any particular testimony of either expert dispositive, in that most factual findings were based on the evidence supporting the relevant testimony. Globally, we accorded more weight to Dr. Min regarding specifics of the computer components and software used to implement the abstract idea and less weight to Mr. Vinella, because Dr. Min's testimony was more consistent with the supporting evidence and the '506 patent, itself.

Preemption

Inasmuch as, Patent Owner argues that the claims of the '506 patent are eligible under § 101 because they do not preempt the full scope of the abstract ideas of routing information to a destination using a lookup table. *See* PO Resp. 54–58. “While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *see Fairwarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016) (“the absence of complete preemption does not demonstrate patent eligibility”). “The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability. For this reason, questions on preemption are inherent in and resolved by the § 101 analysis.” *Ariosa*, 788 F.3d at 1379 (citation omitted).

VII. UNPATENTABILITY UNDER 35 U.S.C. § 112

In the Petition, Petitioner contends that claims 1–38 are unpatentable under 35 U.S.C. § 112 for failing to satisfy the written description requirement. Pet. 70–80. In our Institution Decision, we determined Petitioner's evidence and analysis failed to demonstrate that claims 1–38 of the '506 patent did not satisfy the written

description requirement. Inst. Dec. 26–29. In its Patent Owner’s Response, Patent Owner renews its argument from its Preliminary Response that the ’506 patent satisfies the written description requirement. *See* PO Resp. 79–81; Prelim. Resp. 76–81; PO Sur-Reply 24. Petitioner makes no arguments concerning written description in its Petitioner’s Reply. *See generally* Pet. Reply.

Petitioner, thus, does not apprise us of any reason to change our determination. For the same reason as discussed in our Institution Decision, we determine that we determined Petitioner’s evidence and analysis failed to demonstrate by a preponderance of the evidence that claims 1–38 of the ’506 patent are unpatentable under 35 U.S.C. § 112 for failing to satisfy the written description requirement. Inst. Dec. 26–29.

We determine that Petitioner fails to show by a preponderance of the evidence that claims 1–38 are unpatentable under 35 U.S.C. § 112 for failing to satisfy the written description requirement.

VIII. CONSTITUTIONALITY ARGUMENTS

Patent Owner asserts that retroactive application of covered business method patent review to pre-AIA issued patents is unconstitutional. PO Resp. 81. Patent Owner additionally contends that the proceedings are unconstitutional because “PTAB judges and principal officers” should have been, but have not been, appointed by the President and confirmed by the Senate. *Id.* at 81–82. We decline to consider these constitutional arguments. The “[a]djudication of the constitutionality of congressional enactments has generally been thought beyond the jurisdiction of administrative agencies.” *Thunder Basin Coal Co. v. Reich*, 510 U.S. 200, 215 (1994) (quoting *Johnson v. Robison*, 415 U.S. 361, 368 (1974)). Although “[t]his rule is not mandatory” (*Thunder*, 510 U.S. at 215), “[a] finding

that the agency lacks jurisdiction to decide constitutional questions is especially likely when the constitutional claim asks the agency to act contrary to its statutory charter” (*Riggin v. Office of Senate Fair Emp’t Practices*, 61 F.3d 1563, 1569 (Fed. Cir. 1995)). Considerations in determining whether an agency may decide a constitutional issue include whether “the constitutional issue . . . require[s] the agency to question its own statutory authority or to disregard any instructions Congress has given it,” and whether the defense would “disable the board from fulfilling its responsibility to decide the statutory claim presented to it.” *Id.* at 1569–70.

Patent Owner challenges the constitutionality of congressional enactments, particularly, the constitutionality of covered business method patent reviews as set forth in the AIA. Patent Owner’s constitutional arguments are not directed to a particular statutory provision—instead, they concern the entire statutory scheme of covered business method patent reviews with respect to pre-AIA issued patents. It is, however, our statutory duty to “conduct *inter partes* reviews and post-grant reviews pursuant to chapters 31 and 32” (35 U.S.C. § 6(b)(4)). Thus, Patent Owner’s arguments would have us question our statutory authority and our ability to conduct those reviews—something we decline to do.

IX. CONCLUSION⁴

We determine that Petitioner has shown by a preponderance of the evidence

⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify

that the '506 patent is covered business method patent eligible for review and that claims 1–38 are unpatentable under 35 U.S.C. § 101. Petitioner fails to demonstrate by a preponderance of the evidence that claims 1–38 unpatentable under 35 U.S.C. § 112 for failing to satisfy the written description requirement.

In summary:

Grounds	Basis	Claims	Claims Shown Unpatentable	Claims Not Shown Unpatentable
§ 101	for being directed to patent ineligible subject matter	1–38	1–38	
§ 112	for failing to satisfy the written description requirement	1–38		1–38

XI. ORDER

For the reasons provided, it is:

ORDERED that claims 1–38 of the '506 patent are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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