

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUANTILE TECHNOLOGIES LIMITED,
Petitioner,

v.

TRIOPTIMA AB,
Patent Owner.

CBM2020-00011
Patent 7,613,649 B2

Before JOSIAH C. COCKS, MEREDITH C. PETRAVICK, and
KEVIN W. CHERRY, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Contingent Motion to Amend
35 U.S.C. § 328(a)

I. INTRODUCTION

A. BACKGROUND

Quantile Technologies Limited (“Petitioner”) filed a petition (Paper 2, “Pet.”) to institute an covered business method patent review of claims 1–22 of U.S. Patent No. 7,613,649 B2 (Ex. 1001, “the ’649 patent”) under section 18 of the Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 331 (2011) (“AIA”). Petitioner supports its Petition with the Declaration of Andrew Shaw, dated March 17, 2020. Ex. 1002.

TriOptima AB (“Patent Owner”) timely filed a Preliminary Response. Paper 7. Patent Owner supported its Preliminary Response with the Declaration of Dr. Craig Pirrong dated June 26, 2020. On July 27, 2020, pursuant to our authorization (Paper 8), Petitioner filed a Reply Brief on the limited issue of whether we should exercise our discretion and deny the Petition. Paper 9.

On September 23, 2020, based on the record before us at the time, we instituted a covered business method patent review of all challenged claims on all grounds alleged. Paper 12 (“Institution Decision” or “Dec.”). The claims and ground in this proceeding are indicated in the table below.

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–22	101	Eligibility

Patent Owner filed a Response in opposition to the Petition (Paper 25, “PO Resp.”). Patent Owner supported its Patent Owner Response with the Declaration of Dr. Craig Pirrong, dated December 30, 2020 (Ex. 2012). Patent Owner also filed a contingent Motion to Amend. Paper 26. Petitioner filed a Reply in support of the Petition (Paper 33, “Pet. Reply”) and an Opposition to the Contingent Motion to Amend (Paper 32).

Petitioner supported the Reply with a second Declaration of Andrew Shaw (Ex. 1039). Patent Owner also filed a Sur-Reply in response to Petitioner's Reply. Paper 36 ("PO Sur-Reply").

On April 27, 2021, we offered our Preliminary Guidance on Patent Owner's Contingent Motion to Amend. Paper 35 ("Prelim. Guid." or "Preliminary Guidance"). Patent Owner then filed a Revised Contingent Motion to Amend (Paper 38, "Rev. Mot.") proposing to substitute claims 23–28 ("proposed substitute claims") for claims 1, 2, 9, 14, 16, and 17. Patent Owner supported its Revised Contingent Motion to Amend with a Declaration of Craig Pirrong, Ph.D., dated May 5, 2021 (Ex. 2019). Petitioner filed an Opposition to Patent Owner's Revised Contingent Motion to Amend (Paper 44, "Opp."). Petitioner supported its Opposition with the Declaration of Andrew Shaw in Support of Petitioner's Opposition, dated June 2, 2021 (Ex. 1043). Patent Owner filed a Reply in Support of its Contingent Motion to Amend (Paper 50, "PO Reply"). Patent Owner supported its Reply in support of its Revised Contingent Motion to Amend with a Declaration of Craig Pirrong, Ph.D., dated June 23, 2021 (Ex. 2021). Petitioner also filed a Sur-Reply in Opposition to Patent Owner's Revised Contingent Motion to Amend (Paper 56, "Pet. Sur-Reply").

Both parties requested an Oral Hearing. *See* Paper 43. A transcript of the Oral Hearing is entered in the record. Paper 60 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 326(e) (2018); 37 C.F.R. § 42.1(d) (2019). This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73.

For the reasons expressed below, we conclude that Petitioner has demonstrated by a preponderance of evidence that claims 1–22 are unpatentable as being directed to ineligible subject matter. We also *deny* Patent Owner’s Revised Contingent Motion to Amend.

B. RELATED PROCEEDINGS

Patent Owner represents that Petitioner has filed one other covered business method patent review, CBM2020-00012, against a related patent, U.S. Patent No. 8,010,441 B2. Paper 5, 2. The ’649 patent has been asserted against Petitioner in *TriOptima AB v. Quantile Techs. Ltd.*, No. 2:19-cv-00390-JRG (E.D. Tex. Nov. 26, 2019). Pet. 11; Paper 5, 2.

C. THE ’649 PATENT

The ’649 patent, titled “System and Method of Implementing Massive Early Terminations of Long Term Financial Contracts,” describes systems and methods for implementing massive early termination of long-term financial contracts, such as OTC (Over the Counter) derivative contracts. Ex. 1001, (54), 1:19–22. In particular, the invention relates to a system “for a network based, automated process to decrease the number of outstanding financial derivative transactions between counterparties with the aim of lowering the gross and net credit exposures between counterparties and/or to enhance risk-control and/or lower operational costs and/or risks for each counterparty.” *Id.* at 1:22–28. The ’649 patent issued November 3, 2009, and claims priority through a PCT application to a foreign application filed in the Netherlands on November 24, 1999. *Id.* at (45), (63), (30).

The ’649 patent explains that financial derivatives are “contracts of which the price/value of the contract varies with the value of an underlying instrument.” *Id.* at 1:32–34. The underlying instrument may be a bond, an

equity, an interest rate, a currency exchange rate, commodity price or, in a recent development, even a credit risk. *Id.* at 1:34–36. Some of these contracts are standardized and traded on an exchange. *Id.* at 1:37–40. Other derivatives “are individually negotiated and tailor-made between two counterparties (so called ‘over the counter (OTC) transactions’).” *Id.* at 1:53–55. The ’649 patent states that “[s]ince the OTC contracts are individually negotiated, no objective market price exists,” and “[t]he parties need to do their own valuation of the contracts both when dealing as well as later on when establishing the market value of their contracts during their life.” *Id.* at 1:63–67. The valuation of OTC derivatives is normally “based on pricing formulas using so called valuation parameters for input,” although the models used may vary by party. *Id.* at 1:67–2:9. The ’649 patent explains that active players in the market can have tens of thousands of individual transactions and “[t]he management of these positions is no longer possible on the level of the individual transactions, but only on an aggregated level,” such as by sorting transactions “by underlying instrument, and then express the market value and some risk-characteristics in time-buckets.” *Id.* at 2:10–18.

The ’649 patent explains that the institutions active in the OTC markets “use computer systems for storing the details of the transactions they have done,” and that “[t]hese systems normally have the capability to revalue all transactions and calculate [risk parameters] of all transactions on a unilateral basis.” *Id.* at 2:50–54. The ’649 patent explains that “[a] normal procedure is also to do a daily mark-to-market, which means re-valuation of all transactions according to the prevailing market conditions,” and “[t]he mark-to-market values as of close of business are stored in databases for

calculating profit and loss, risk exposure, credit exposure etc.” *Id.* at 2:54–59.

The ’649 patent describes that, although parties enter into OTC derivative transactions for the purpose of transferring market risk, an “unavoidable consequence” of these transactions is that “the parties are getting a new exposure to two different risk categories, credit risk and operational risk.” *Id.* at 3:55–61. Credit risk results because “in each bilateral relationship a bank will have either a net claim or a net debt,” and “[a] claim is a credit exposure and as such is subject to capital sufficiency requirements imposed by the regulators.” *Id.* at 3:46–50. Bank supervisors require banks to hold capital against both market risk and credit risk, because capital is scarce, banks try to reduce the capital tied up by the unintentionally acquired credit risk in OTC derivatives. *Id.* at 4:5–19. Operational risk “can be defined as all risks an institution is exposed to, other than the intentionally accepted market and credit risk within the allowed limits of the bank,” and

includes, among others, unwanted market or credit risk as a consequence of staff errors (on purpose or by accident) or errors in the risk management systems, fraud by staff, customers or third parties, wrong valuation of transactions based on wrong parameter input, or mistakes in the maintenance of outstanding contracts during their lifetime (so called fixings, settlements, assignments, exercises or payments).”

Id. at 6:9–18.

The ’649 patent explains that it was already known that the “sum of all transactions between two counterparties was much less dependent on market changes than the sum of the individual transactions,” so “sophisticated institutions are now calculating the credit exposure based on

the sum of all transactions with each counterparty.” *Id.* at 4:20–29.

According to the ’649 patent, this summing of transactions with a particular counterparty is known as “netting,” and is possible because of the development of standardized agreements “whereby all individual trades are deemed to be one Agreement, and many countries around the world changed their bankruptcy laws to accommodate this development.” *Id.* at 4:30–41. However, the credit exposure can never be netted between counterparties, i.e., a claim on party X cannot be offset by a debt to party Y. *Id.* at 4:42–49.

Another method developed to limit risk is the inclusion of “break-clauses” in agreements that allow parties to terminate the transaction at specified points in time at the prevailing market price. *Id.* at 4:50–55. “A party may also choose to assign his part of a deal to a new party.” *Id.* at 4:56–57. Assignments allow parties to get reduced or increased exposure towards the other parties, but assignment requires the consent of all parties. *Id.* at 4:59–62. Other known methods include “credit mitigation” and “clearing.” *Id.* at 4:63–66, 5:20–44. The ’649 patent discloses that both of these processes can be done through a central service.

The ’649 patent asserts that “there is therefore an incentive for banks to try to reduce the costs and risks associated with the OTC derivatives portfolios they have built up,” and one “apparent way of achieving this would be to terminate OTC transactions before their designated maturity, preferably in a way that reduces the bilateral credit exposure.” *Id.* at 6:60–65. The ’649 patent identifies a number of issues that must be addressed to allow early termination: (1) both the original counterparties need to agree to the early termination; (2) the parties need to establish they are talking about the same trade, because the parties each assign their own identifier to the

trade and there is generally no common identifier or central registry for the trade; (3) the parties need to agree on the value of the trade; (4) the bank may not want to change its market risk position; (5) the bank does not want to make a large cash payment, which may be required to terminate; and (6) the first-mover in an early termination is at a disadvantage because the price must be negotiated and other party can then require a valuation in their favor. *Id.* at 7:1–44. The '649 patent states that the objective of the invention is to overcome at least these problems. *Id.* at 7:54–55.

An embodiment of the system proposed by the '649 patent to overcome these problems is shown schematically in Figure 2, reproduced below.

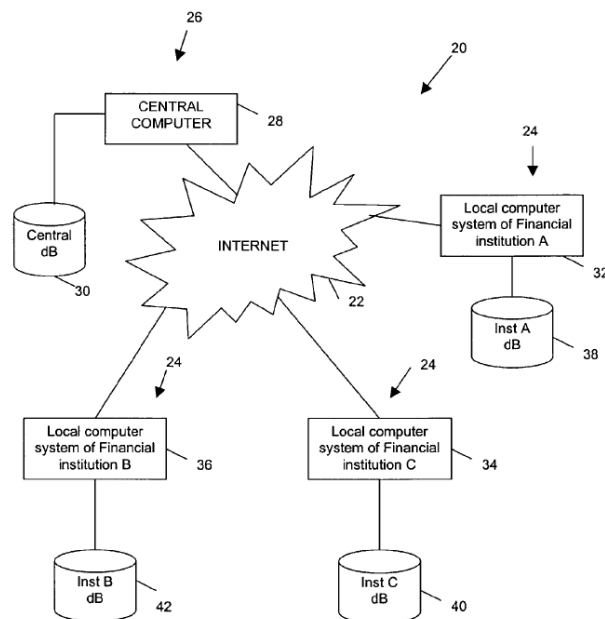


Figure 2

Figure 2 is a schematic block diagram of an embodiment of the '649 patent's system. *Id.* at 11:22–24. System 20 is implemented as a network service in that system 20 provides communications network 22 (the Internet in this

embodiment) connecting institutions 24 trading OTC derivatives with central site 26 where a secure transfer of data can take place. *Id.* at 11:56–61. At central site 26, central computer 28 is provided with central database 30 for storing transaction data during the mass termination process and performs most of the processing to implement the desired mass early terminations. *Id.* at 11:61–65.

Figure 3, reproduced below, illustrates the basic process of the system of the preferred embodiment

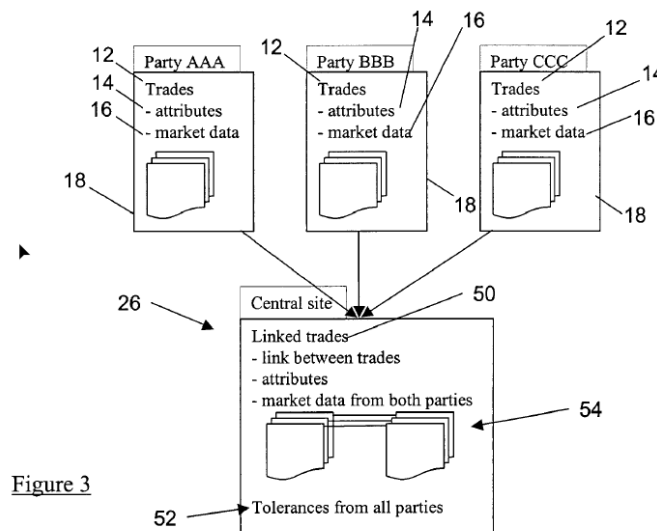


Figure 3 is a schematic drawing of the local and central processing stations of Figure 2. *Id.* at 11:25–26. As illustrated in Figure 3, system 20 acts to connect together lists 18, of apparently disparate transactions received from each of the different institutions 24 at central site 26 using trade attributes 14 and market data 16. *Id.* at 12:7–11; 20:26–22:51 (describing the linking process as determining whether “major attributes” of database records of the trades match). System 20 generates lists 54 of linked trades 50 for each institution 24. *Id.* at 12:11–13. Thereafter, system 20 processes linked trades 50 such as to effect proposals for mass terminations, which meet the

present on central computer 28 to implement the steps of the process of the linking of trades, analyzing potential trades, generating proposals of trades, and transmitting proposals. *Id.* at 13:45–50. Application server 104 inclusive of a plug-in, is provided on central computer 28, and securely communicates any proposal over Internet 22 to the respective institution 24 for consideration and approval. *Id.* at 13:50–58.

Figure 6, reproduced below, is a schematic block diagram of the functional modules of the central computer as shown in Figure 2. *Id.* at 11:32–33.

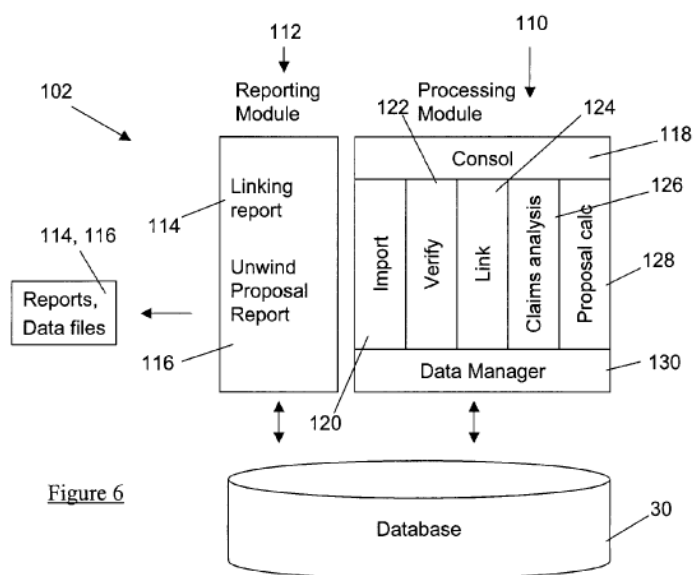


Figure 6 is a block diagram illustrating the functional modules on the central computer. *Id.* at 14:12–13. Processing function 102 comprises a core processing module 110 and a reporting module 112. *Id.* at 14:13–14. Both processing module 110 and the reporting module 112 interface to central database 30 to retrieve and store data in order to implement their respective functions. *Id.* at 14:15–18. The function of reporting module 112 is two-fold, firstly to generate a linking report 114 for sending out to institutions for verification, and secondly to generate an unwind proposal

report 116 for each institution 24 for their approval. Link function 124 implements the linking (matching) of trades. *Id.* at 14:36–38. The ’649 patent explains that

An early termination of an OTC derivative trade requires the consent of both parties in the trade. It is therefore required that both parties have submitted their version of the trade to the central computer 28 for unwind processing. The central computer 28 establishes that this is the case by finding and linking the trades that both parties have submitted. Since there is in general no common identifier, the central computer 28 uses the other attributes 14, 16 of the trades 12 in order to see if both parties have sent in their version of the same trade 12. This is done in a process called trade linking.

Id. at 20:27–36. The Specification explains that “[i]n the trade linking process the key financial terms of the deals is used to identify the trade,” and that “[t]he key financial terms are different for different types of OTC derivatives.” *Id.* at 20:64–67. The patent describes key characteristics that are used for swap transactions. *Id.* at 21:1–6. It explains that these key attributes are usually sufficient, but that if there is an ambiguity, it can be reported to the financial institutions, who have to confirm the transactions, in any event. *Id.* at 21:8–23:9.

The ’649 patent notes that

Matching services are known that provide matching and linking of deals at the moment they are done. SWIFT Accord for example, provides such a matching service. For matched trades there is a common identifier and in that case this common identifier is used for the linking of trades.

Id. at 20:37–41.

Claims analysis function 126 controls the finding of groups of potential parties to the unwind proposal of the linked trades. *Id.* at 14:38–40. The ’649 patent explains that:

The purpose with the claims analysis is to find groups of banks for which an unwind proposal should be calculated. The selection criteria is that the banks in such a group should have both claims and debts towards each other, and ideally the sum of the claims should equal the sum of the debts for each bank. If that is the case, the potential for credit exposure reduction is maximised.

Id. at 23:11–18. The Specification also provides a “non-limiting example” of the algorithm used to do this claims analysis. *Id.* at 25:16–26:41.

Proposal calculation function 128 analyses the results of claims analysis function 126 and selects the most suitable group of potential unwinds given the benefit to all parties concerned and taking into account specified tolerances 52. *Id.* at 14:41–45. The processing module also comprises data manager 130 that manages the many data interactions between these functions and central database 30. *Id.* at 14:45–48.

The ’649 patent explains that

Since unwinding is done using linked trades, the package of transactions in the unwind proposal must simultaneously fulfill all involved parties’ specified tolerances. This also means that the unwind proposal must be accepted by all parties simultaneously and in full. If one party rejects the proposal, the whole proposal is rejected. If one trade in the package is removed, the proposal will (most likely) no longer fulfill all tolerances. Hence, there is no possibility to alter the proposal by removing individual trades. The proposal also contains a net close out amount to be paid or received by each party. This close out amount is a part of the proposal and cannot be negotiated.

Id. at 26:47–58.

The ’649 patent further explains that the goal is “to find a package of trades that fulfills all involved parties’ tolerances simultaneously,” where the package has as many full trades as possible are terminated. *Id.* at 26:59–63. The ’649 patent states that this problem “is of the nature [of] ‘constrained

optimisation” and because the “constraints and the optimisation goal function are linear which means that a standard method for linear programming can be used.” *Id.* at 27:7–13. The ’649 patent states that:

There is a vast literature and a number of standard software packages available for the solution of linear programming (LP) problems. A detailed description of a solution method for linear programming problems can be found in “Dahlquist, Björck, Anderson (1974) *Numerical Methods* Prentice Hall, Englewood Cliffs, N.J.”.

Id. at 27:26–31. The ’649 patent does provide an “exemplary description is only intended to show how the unwind proposal calculation problem is formulated as a standard LP problem.” *Id.* at 27:31–33; *see also id.* at 27:34–30:59 (describing exemplary solution for LP problem).

Once these calculations are complete the proposal is sent out to the financial institutions for their confirmation. *Id.* at 13:51–59.

Petitioner challenges all twenty-two claims of the challenged patent. Claims 1, 17, 19, and 21 are independent claims. Claim 1 is illustrative of the claimed subject matter:

1. A system for exchanging OTC (Over the Counter) derivatives related data comprising:
 - a plurality of data input/output and processing stations, an optional central station and a network interconnecting all stations, wherein the data input/output and processing stations are operable by parties participating in OTC derivatives related contracts for transmitting and receiving, through the network, trade details for existing OTC derivative transactions carried out with other parties, wherein the optional central station is for receiving the trade details over the network from the data input/output and processing stations, wherein the existing OTC derivative transactions include linked OTC derivative transactions for which the trade details are available for

both of the parties to the respective existing OTC derivative transaction;

wherein at least one of the data input/output and processing stations or optional central station includes a processor, wherein the processor is operable for generating, using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative transactions having designated maturity dates, wherein each of the proposals includes at least three involved parties, and wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before their respective designated maturity dates, according to parameters set by the involved parties;

wherein the at least one station provides the premature termination and assignment proposal packages to the involved parties for their approval.

Ex. 1001, 32:42–33:15.

II. ANALYSIS

A. CLAIM INTERPRETATION

We interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b) “including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of

ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.200(b) (2019). When applying that standard, we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we give claim terms their ordinary and customary meaning as they would be understood by an ordinarily skilled artisan. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning ‘is the meaning that the term would have to a person of ordinary skill in the art in question.’” (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005))). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

We discern no terms in need of express interpretation. Accordingly, we apply the legal standards set forth above when reading the claims.

B. CBM PATENT REVIEW ELIGIBILITY

In our Institution Decision, we found that Petitioner had standing to file the Petition, had shown that the claims of the ’649 patent were directed to a financial product or service, and had shown that the claims did not cover “technological inventions.” Dec. 20–28. Patent Owner does not contest these findings in its Patent Owner Response. *See generally* PO Resp.; PO Sur-Reply. We previously instructed Patent Owner that “any arguments not raised in the [Patent Owner Response] may be deemed waived.” Paper 13, 8; *see also In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that patent owner’s failure to proffer argument at trial as instructed in scheduling order constitutes waiver). Accordingly, for reasons stated in

detail in our Institution Decision, we determine that Petitioner had standing to file the Petition, had shown that the claims of the '649 patent were directed to a financial product or service, and had shown that the claims did not cover “technological inventions.” Dec. 20–28.

C. LEGAL STANDARD POST INSTITUTION

In our Institution Decision, we concluded that the argument and evidence adduced by Petitioner demonstrated that it was more likely than not that claims 1–22 were unpatentable as directed to ineligible subject matter under 35 U.S.C. § 101. Dec. 41. We must now determine whether Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable. 35 U.S.C. § 326(e) (2018). Additionally, the Board’s Trial Practice Guide states that the Patent Owner Response “should identify all the involved claims that are believed to be patentable and state the basis for that belief.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

D. PATENT ELIGIBILITY

1. Overview

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the U.S. 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. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court’s two-part framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*,

566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“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 petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that “a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 187; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Court also indicated that a claim “seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this

principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* (citation omitted) (citing *Benson* and *Flook*); see, e.g., *id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second part of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (quotation marks omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.* at 212.

2. USPTO Section 101 Guidance

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101.¹ The Manual of Patent Examining Procedure (“MPEP”) now incorporates this revised

¹ 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Revised Guidance”). In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the “October 2019 Update”). “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” 84 Fed. Reg. at 51; see also October 2019 Update at 1.

guidance and subsequent updates at § 2106 (9th ed. Rev. 10.2019, rev. June 2020).²

Under MPEP § 2106, 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) (“Step 2A, Prong One”); and
- (2) additional elements that integrate the judicial exception into a practical application (“Step 2A, Prong Two”).³

MPEP § 2106.04(a), (d).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application,⁴ do we then look, under Step 2B, to whether the claim:

- (3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional activity” in the field; or

² All references to the MPEP are to the Ninth Edition, Revision 10.2019 (Last Revised June 2020), unless otherwise indicated.

³ “Examiners evaluate integration into a practical application by: (1) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (2) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.” MPEP § 2106.04(d)(II).

⁴ This corresponds to *Alice* part one where it is determined whether the claim is “directed to” an abstract idea. *See Alice*, 573 U.S. at 219. If a claim is “not directed to an abstract idea under step one of the *Alice* analysis, we do not need to proceed to step two.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016).

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.⁵

MPEP § 2106.05(d). Our reviewing court has warned that “the Office Guidance is not, itself, the law of patent eligibility” and “does not carry the force of law.” *In re Rudy*, 956 F.3d 1379, 1382 (Fed. Cir. 2020); *see also* *cxLoyalty, Inc. v. Maritz Holdings Inc.*, 986 F.3d 1367, 1375 n.1 (Fed. Cir. 2021); *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 760 F. App’x 1013, 1020 (Fed. Cir. 2019). Rather, “it is our [reviewing court’s] caselaw, and the Supreme Court precedent it is based upon, that must control.” *Rudy*, 956 F.3d at 1383 (citation omitted). Thus, although our analysis may be framed in terms of the 2019 Revised Guidance, our decision is based upon governing precedent of the United States Supreme Court and our reviewing court’s interpretation and application thereof.

3. *Whether the Claims Recite a Judicial Exception*

Petitioner contends, “[t]he Claims fail under Step One of the *Alice* framework for claiming the abstract idea of simplifying a trade portfolio through premature termination of certain transactions.” Pet. 25. Petitioner argues that this concept has “long been used in the financial industry, including with respect to OTC derivatives, to reduce risk between parties,” and “is a fundamental economic practice for efficiently managing trade portfolios.” *Id.* Petitioner also contends that “the Claims merely recite mental steps that are foundational in the financial industry for simplifying trade portfolios through premature termination.” *Id.* Petitioner states:

⁵ This corresponds to *Alice* part two where it is determined whether the claim “contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221.

Fundamentally, the claim features are (i) “transmitting and receiving . . . trade details for existing OTC derivative transactions,” (ii) “generating, using linked OTC derivative transactions, premature termination and assignment proposals,” and (iii) “provid[ing] the premature termination and assignment proposals to the parties for approval.” Exh. 1001, Claim 1. Put another way, the Claims simply require identifying transactions between involved parties, including transactions from original counterparties representing the same trades (i.e., linked transactions) and selecting transactions from those linked transactions premature termination, and proposing those trades for premature termination to the parties, all in an effort to reduce risk. *See* Exh. 1001, Claim 1.

Id. at 26 (alterations in original).

Petitioner submits that:

The idea at the heart of the ’649 Patent is efficient management of bank portfolios with its different counterparties. As Petitioner’s expert points out, simplifying trade portfolios is a “fundamental economic practice[,]” as “[f]inancial institutions have long known that reducing the number of trades on their books decreases their operational expenses and can also reduce market and credit risks.” Exh. 1002, ¶ 33; . . . Exh. 1008, p. 33; Exh. 1007, p. 13; Exh. 1032, p. 13; Exh. 1006, p. 2 at ¶ 3; Exh. 1015, pp. 8-9 at ¶¶ 6-7; Exh. 1012, p. 3. Many ways of simplifying a trade portfolio have been used for generations prior to the filing of the ’649 Patent. Exh. 1002, ¶ 34; . . . Exh. 1011, pp. 11-15, 17-25; Exh. 1014, p. 12-13; Exh. 1025; Exh. 1032; Exh. 1033, pp. 31-33.

Id. at 26–27.

We begin with claim 1.⁶ Claim 1 recites “[a] system for exchanging OTC (Over the Counter) derivatives related data.” Ex. 1001, 32:42–43. The system comprises:

a plurality of data input/output and processing stations, an optional central station and a network interconnecting all stations, wherein the data input/output and processing stations are *operable by parties participating in OTC derivatives related contracts for transmitting and receiving, through the network, trade details for existing OTC derivative transactions carried out with other parties*, wherein the optional central station is *for receiving the trade details over the network from the data input/output and processing stations, wherein the existing OTC derivative transactions include linked OTC derivative transactions for which the trade details are available for both of the parties to the respective existing OTC derivative transaction*;

wherein at least one of the data input/output and processing stations or optional central station includes a processor, wherein the processor is *operable for generating, using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative transactions having designated maturity dates, wherein each of the proposals includes at least three involved parties, and wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before*

⁶ Claim 17 is a “computer implemented method” essentially the same as claim 1. Patent Owner does not argue claim 17 separately, so this analysis of claim 1 applies equally to claim 17.

their respective designated maturity dates, according to parameters set by the involved parties;

wherein the at least one station provides the premature termination and assignment proposal packages to the involved parties for their approval.

Id. at 32:41–33:15 (emphasis added). The combination of the elements italicized above recites the concept of simplifying a trade portfolio through premature termination of certain transactions. The claimed system accomplishes this through collecting information, linking related information together, and then using mathematical techniques on the information to generate a “proposal package” of transactions for “termination and assignment.” This is all a mental process, an example of an abstract idea.

The Federal Circuit has “treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.” *Electric Power Group, LLP v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016). The Federal Circuit has explained that “claims focused on ‘collecting information, analyzing it, and displaying certain results of the collection and analysis’ are directed to an abstract idea.” *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (quoting *Elec. Power*, 830 F.3d at 1353). “Information as such is an intangible,” hence abstract, and “collecting information, including when limited to particular content (which does not change its character as information), [i]s within the realm of abstract ideas.” *Elec. Power*, 830 F.3d at 1353 (citing cases). So, too, is “analyzing information . . . by mathematical algorithms, without more.” *Id.* at 1354. And “merely presenting the results of abstract processes of collecting and

analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.” *Id.*; *see also* PO Resp. 28 (explaining “[t]he claims then provide the generated proposals and/or their aggregated value to the involved parties for approval (e.g., through a web site).”).

Nor does it matter to this conclusion whether the information here is information about standard or non-standard OTC derivatives. PO Resp. 1, 5–8. As many cases make clear, even if a process of collecting and analyzing information is “limited to particular content” or a particular “source,” that limitation does not make the collection and analysis other than abstract. *Elec. Power*, 830 F.3d at 1353, 1355 (citing cases). Moreover, the “OTC derivative” character of this information simply invokes a separate category of abstract ideas involved in *Alice* and many other cases, a certain method of organizing human activity—“the creation and manipulation of legal obligations such as contracts involved in fundamental economic practices.” *Id.* at 1354; *SAP*, 898 F.3d at 1168 (system for performing statistical analysis on investment information and generating a report based on the analysis is abstract); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“At best, the claims describe the automation of the fundamental economic concept of offer based price optimization through the use of generic-computer functions.”).

The Federal Circuit has found claims that recite similar concepts akin to the concept of simplifying trade portfolios through the premature termination ineligible. *See* MPEP 2106.04(a)(2). For example, in *Credit Acceptance Corp. v. Westlake*, a system for generating financing packages for each product in a dealer’s inventory and transmitting financing terms for

each financing package to a user terminal via the network for presentation to the user for immediate purchase, wherein the server is further configured such that the financing terms of each financing package include an advance amount to be paid to the dealer by said financing party if the customer purchases the product associated with the financing package, was determined to be drawn to processing an application for financing a purchase. *Credit Acceptance Corp. v. Westlake*, 859 F.3d 1044, 1054–55 (Fed. Cir. 2018). The Federal Circuit explained it saw “no meaningful distinction between this type of financial industry practice and ‘the concept of intermediated settlement’ held to be abstract in *Alice*, 134 S. Ct. at 2356, or the ‘basic concept of hedging’ held to be abstract in *Bilski v. Kappos*.” *Id.* at 1054.

Importantly, none of the claims recites “linking.” They simply recite “linked OTC derivative transactions,” without claiming how the linking occurs. *See* Ex. 1042, 60:17–61:1 (admitting “linking” is not claimed). Thus, the “linking” process cannot serve as a basis for patentability. *See Synopsis*, 839 F.3d at 1149. Yet even if it was claimed, “linking” is a mental process or a certain method of organizing human activity (a commercial or legal interaction) and, thus, an abstract idea. Indeed, humans have been matching—i.e., linking—similar—although not identical items for a long time by comparing different attributes of the two items to determine whether they are the same or not. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011) (obtaining information about Internet credit card transactions, making a map of the credit card numbers, and using the map to determine if a transaction is valid can be performed entirely in the human mind including logical reasoning steps by writing a list

of credit card transactions from a particular IP address and observing transactions to see if they use different credit cards and user names at the same IP address).

The same is true with realizing that aggregating transactions together can be used to sell groups of items that otherwise would be difficult to sell individually.

Second, Patent Owner argues Petitioner “oversimplif[ies]” the claims “stripp[ing] the claim of detail.” PO Resp. 2, 16–20, 34. In particular, Patent Owner contends that Petitioner “boil[s]” the claims down to three steps:

- (1) identifying transactions between the involved parties; (2) selecting those trades which represent the same trades of the original counterparties; and (3) selecting certain transactions from step (2) which can be used to simplify a trade portfolio and providing them to the involved parties for approval.

PO Resp. 16 (quoting Pet. 32–33, 48). For example, Patent Owner argues that “Petitioner’s ‘three steps’ do not even include termination.” PO Resp. 17. We disagree that Petitioner has improperly over-simplified the claims. For example, Patent Owner’s argument ignores that claim 1 does not even require any termination take place—it merely requires the generation of a proposal of transactions for “termination *or* assignment.” Ex. 1001, 32:59–33:11. Even if more granular details of claim 1 are incorporated into the three steps, we find it does not change the abstract nature of the claims, because “a claim is not patent eligible merely because it applies an abstract idea in a narrow way.” *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1287 (Fed. Cir. 2018).

In addition, contrary to Patent Owner’s apparent contentions, we do not agree that claim 1 is limited to specific rules, let alone the specific rules

disclosed in columns 26 to 30 of the '649 patent. Instead, we agree with Petitioner that the claims of the '649 patent, and claim 1 in particular, are written in broad results-oriented language, not limited to a particular rule set, as was the case in *McRO*. See *McRO*, 837 F.3d at 1311; Ex. 1001, 25:16–17 (stating algorithm described for the branching process to identify potential transactions is “[a] non-limiting example”), 27:7–33 (describing the package calculation process as a “constrained optimization” problem that can be solved using “a standard method for linear programming” where there is “a vast literature and a number of standard software packages available for the solution”). The relevant portion of claim 1 recites:

generating, using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative transactions having designated maturity dates, wherein each of the proposals includes at least three involved parties, and wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before their respective designated maturity dates, according to parameters set by the involved parties

Ex. 1001, 32:60–33:12. Although this limitation sets certain requirements that the proposal must meet, it sets no condition on *how* a proposal meeting those conditions can be generated. Thus, Patent Owner’s arguments about the allegedly novel “compression” method are not commensurate with the scope of the claims. See PO Resp. 29 (explaining “the problem *can be*

solved using a linear programming solution method” and explaining the explanation in the ’649 patent is “exemplary”).

Accordingly, Petitioner has shown that the claims recite a concept that falls within the categories of abstract ideas—specifically, certain methods of organizing human activity (commercial or legal interactions, such as business relations) and mental processes (observation and evaluation).

4. 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 55. Some exemplary considerations include whether the additional elements reflect an improvement to the functioning of a computer or use the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment. The term “additional elements” refers to features, limitations, or steps that the claim recites beyond the abstract idea itself. *Id.*

Petitioner contends that the claims do not integrate the abstract idea into a practical application of the abstract idea because the claims merely apply the abstract idea using generic computers and do not recite an improvement to technology. Pet. 38–43.

In addition to the abstract idea, claim 1 recites: “a plurality of data input/output and processing stations, an optional central station,” “a network,” and “a processor.” Ex. 1001, 32:41–33:15. These additional

elements, considered individually and as a whole, do not integrate the abstract idea into a practical application. Specifically, we are persuaded by Petitioner that the additional elements merely invoke computers as a tool and do not reflect an improvement to the functioning of a computer or an improvement other technology or technical field. *See* 2019 Revised Guidance, 84 Fed. Reg. at 55.

Patent Owner argues:

The invention of the '649 patent overcame these technical problems with a technical solution that integrated several technological advances: (1) an OTC derivative compression process using particular constrained optimization problems; (2) an OTC derivative trade linking process; and (3) a centralized processor, performing compression and linking, that receives trade data from multiple parties. These technological advances illustrate that the claims are not “a drafting effort designed to monopolize [a] judicial exception.”

PO Resp. 56 (citing *Ex Parte Smith*, Appeal No. 2018-000064, 2019 WL 764497, at *5 (PTAB Jan. 31, 2019) (informative)).

We disagree with Patent Owner that the claims are integrated into a practical application in the manner Patent Owner suggests. Petitioner’s evidence and analysis persuade us that the additional elements of the claims, both individually and as an ordered combination, do not transform the nature of the claims into a patent-eligible application.

Patent Owner’s arguments concerning derivative compression process using particular constrained optimization problems are not persuasive because, as discussed above with respect to step 1, prong 1, the claims do not require such. *See* PO Resp. 57–59. “The § 101 inquiry must focus on the language of the Asserted Claims themselves.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016); *see Accenture*

Global Servs., GmbH v. Guidewire Software, Inc., 728 F.3d 1336, 1345 (Fed. Cir. 2013) (admonishing that “the important inquiry for a § 101 analysis is to look to the claim”); *see also Content Extraction and Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) (“We focus here on whether the claims of the asserted patents fall within the excluded category of abstract ideas.”); October 2019 Update, 12 (“[I]f the specification sets forth an improvement in technology, the claim must be evaluated to ensure that the claim itself reflects the disclosed improvement. That is, the claim includes the components or steps of the invention that provide the improvement described in the specification.”). There are no “particular constrained optimization problems” required in claim 1. Claim 1 simply claims a result, not a particular way of accomplishing that result.

Patent Owner argues that the claims also “require trade linking (e.g., reciting the use of ‘linked OTC derivative transactions’ or ‘linked pairs of OTC derivative transactions’).” *Id.* at 63. Patent Owner contends that “because OTC derivative transactions, i.e. OTC derivative contracts, are individually negotiated and lack a centralized authority or exchange, the two sides of a trade can record the details of the same transaction in different ways.” *Id.* Patent Owner asserts that “[t]rade linking is a specific technical process involving the post hoc matching of attributes and market data, which were recorded differently and often using different conventions, to uniquely identify two versions of the same trade.” *Id.* Patent Owner also contends that “[e]ach independent claim recites a processor, performing compression, that receives trade data from multiple parties.” *Id.* at 65. Patent Owner argues that “[t]his centralized processor may be a standalone processor or

may be integrated in a processor at a financial institution and replaced what was a local process of manually negotiating the termination of non-standardized instruments. The consolidation of compression and linking at a centralized processor greatly increased the quality of potential termination proposals.” *Id.*

We are not persuaded that the claimed “trade linking” or “centralized processor” are recited at a level of particularity or improvement to integrate the abstract idea recited in claim 1 into a practical application. *See* MPEP 2106.04(d).

In claim 1, the “at least one processor” is operable for generating, using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative transactions having designated maturity dates, wherein each of the proposals includes at least three involved parties, and wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before their respective designated maturity dates, according to parameters set by the involved parties.

Ex. 1001, 32:60–33:12.

These steps recite generic computer functions of a processor. The Specification describes “central computer” as being “provided together with a central database 30 for storing transaction data during the mass termination process,” performing “most of the processing to implement the desired mass

early terminations as is described in detail hereinafter.” *Id.* at 11:64–67. As illustrated in Figures 2, 3, 4, 5, and 6, the central processor is part of a generic computer or “application server” interacting with a standard database. *Id.* at 13:39–58, 14:13–18.

Thus, the central processor is claimed and described as a generic computer component that performs generic functions of receiving data and then performing operations and calculations, then communicating proposals of transactions to terminate with the local computers using, for example, email. The “central processor” is not claimed or described as an improvement to computers or another technical field. It is not a particular machine or manufacture integral to claim 1 given its generic description and functionality. It does not transform an article to a different state or thing or otherwise apply the abstract idea in a meaningful way. *See* MPEP 2106.04(d).

The fact that the “central processor” is used and claimed to perform steps of the recited abstract idea does not integrate the abstract idea into a practical application or otherwise make the abstract idea patent-eligible, at least not on that basis. “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*, 899 F.3d at 1290; see *id.* at 1291 (“As a matter of law, narrowing or reformulating an abstract idea does not add ‘significantly more’ to it.”); *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract.”); *Synopsys*, 839 F.3d at 1151 (“[A] claim for a new abstract idea is

still an abstract idea.”); *Versata*, 793 F.3d at 1335 (claims that improved an abstract idea, but not a computer’s performance, were held unpatentable).

Mere recitation of concrete, tangible components such as a processor is not sufficient to make abstract ideas performed on or with that processor patent-eligible. *Alice*, 573 U.S. at 223 (“[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. . . . [I]f a patent’s recitation of a computer amounts to a mere instruction to ‘implemen[t]’ an abstract ‘on . . . a computer,’ . . . that addition cannot impart patent eligibility.”) (citation omitted).

Here, the focus of any of the claims is not on a technical advance in processors. Rather, the focus is on performance of an abstract idea for which a processor is invoked merely as a tool. *See Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

So too, “trade linking” is recited as generic data processing performed by a database. The Specification repeatedly describes “linking” of trade as “matching” Ex. 1001, 14:36–37. The Specification explains “the key financial terms of the deals is used to identify the trade data” and proceeds by finding matches by comparing the key financial terms of each trade record. *Id.* at 20:27–22:54. Although the Specification does describe some additional features of rating the relative strength of the match, none of those specific features are recited in the claim. Simply matching various key fields of database records is just a generic database function. Indeed, the Specification explains that

Matching services are known that provide matching and linking of deals at the moment they are done. SWIFT Accord for example, provides such a matching service. For matched trades there is a common identifier and in that case this common identifier is used for the linking of trades.

Id. at 20:37–41. Patent Owner argues that the matching used for SWIFT was something less than what their system performs (PO Resp. 64), but none of that is reflected in the claims. The claims merely require “linking.” Patent Owner offers no construction or narrowing of the claims, or contention that “linking” has some special meaning in the art. Thus, Patent Owner’s arguments are not persuasive.

As the Supreme Court held in *Alice*, “[n]early every computer will include a ‘communications controller’ and a ‘data storage unit’ capable of performing the basic calculation, storage, and transmission functions required by the method claims.” *Alice*, 573 U.S. at 226. It also has been held that generic computer components such as an “interface,” “network,” and “database” fail to integrate an abstract idea into a practical application. *Mortg. Grader, Inc. v. First Choice Loan Serv. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (holding that claims reciting an “interface,” “network,” and a “database” are nevertheless directed to an abstract idea); *see also Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1368 (Fed. Cir. 2015) (holding that a “database” and “a communication medium” “are all generic computer elements”); *buySAFE*, 765 F.3d at 1355 (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”).

Accordingly, and for the foregoing reasons, we determine that claim 1 does not include any additional elements that integrate the abstract idea into a practical application.

The decision *Ex Parte Smith*, Appeal No. 2018-000064, 2019 WL 764497 (PTAB Jan. 31, 2019) (Informative) is not to the contrary. *Smith* found an integration because the claims recited “a specific timing

mechanism in which the execution of a matching order is delayed for a specific period of time” to allow for other matching orders to be received from in-market participants. *Id.* at *5. The use of timing mechanisms and temporary restraints on trade execution improved trading technology. *Id.*

Here, claim 1 lacks any kind of timing mechanism or similar delay in trading of derivatives or other financial instruments. Instead, the system collects information, matches information together, and then generates a proposal of possible trades that can be terminated or assigned. As we explained above, this is abstract, and combining or narrowing an abstract idea is still an abstract idea. *See RecogniCorp*, 855 F.3d at 1327.

Accordingly, we conclude that claim 1 fails to integrate the abstract idea into a practical application.

5. Whether Any Additional Elements Recite Significantly More

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*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78–79). To determine whether claim 1 provides an inventive concept, we consider the additional elements, individually and in combination, to determine whether they (1) add a specific limitation 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. *See* MPEP 2106.05.

Petitioner contends that the combination of additional elements of claim 1 recite only conventional human activities and do not provide any

improvements in computer technology. Pet. 37–43. Petitioner provides a detailed explanation, supported by evidence, that the combination of additional elements was well-known and conventional. *Id.* Petitioner further argues that the claims are directed to result-oriented functionalities, such as “generating . . . premature termination and assignment proposals” and “provid[ing] the premature termination and assignment proposal packages to the parties” without reciting any specific technical solutions as to how those steps are carried out. *Id.* at 37–38, 43–48. Moreover, Petitioner contends that none of the claims viewed as an ordered combination transforms the abstract idea into patent-eligible subject matter. *Id.* at 37, 48–50.

Patent Owner contends that “[t]he claims of the ’649 patent provide an inventive concept because they recite ‘a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field.’” PO Resp. 71 (quoting 84 Fed. Reg. at 56). Patent Owner argues that “none of the independent claims merely states a conventional or generic computer implementation of any known procedures for generating premature termination proposals.” *Id.* at 72. Patent Owner asserts that “Petitioner has not established that the overall process was known (much less conventional) or that the computer implementation or arrangement (using specifically-formulated constrained optimization problems, trade linking, and central processing capability) was generic or conventional.” *Id.*; PO Sur-Reply 22–24.

Patent Owner contends that Petitioner “merely identified other practices that do not contain the features of the claimed system and do not produce the same quality of output.” *Id.* Patent Owner submits that “[w]hile

there were known techniques for solving constrained optimization problems, as discussed, there is no evidence that they were conventionally used to generate premature termination proposals of OTC derivative transactions among three or more parties with central processing capability, much less with the specific formulations recited in various claims.” *Id.* at 73; PO Sur-Reply 19–22.

Patent Owner argues that this case is similar to *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016). *Id.* at 75. Patent Owner contends that, like *Bascom*, “known solutions were either centralized but inflexible (netting of standardized instruments) or dependent on distributed, local negotiation (break clauses, bilateral restructuring, and lifting out), whereas the patented system is flexible enough to handle non-standardized instruments yet installable at a central location.” *Id.*; PO Sur-Reply 24–26. Patent Owner argues that “the claims do not rely on the mere recitation of a computer or the internet itself to provide an inventive concept because, as discussed, they do not claim the generic automation of a known process.” *Id.* at 76. Instead, “the inventive concept lies in the improved method, not the use of a computer to perform a known method.” *Id.* Patent Owner contends that the claims are not “results-oriented” because “it **does** matter by what process or machinery the result is accomplished.” *Id.* at 79. Further, Patent Owner asserts that the claims do not preempt the field because “numerous techniques, manual or computerized, fall outside their ambit.” *Id.* at 80; PO Sur-Reply 26.

To qualify as an inventive concept, the implementation of the abstract idea must involve “more than performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Content*

Extraction, 716 F.3d at 1347–48 (alteration in original) (quoting *Alice*, 573 U.S. at 225).

Claim 1 uses a generic processor to perform well-understood, routine, conventional activities previously known to the industry, such as receiving and analyzing data and performing mathematical calculations. *See Bancorp Servs., L.L.C v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“[T]he use of a computer in an otherwise patent-ineligible process for no more than its most basic function--making calculations or computations-- fails to circumvent the prohibition against patenting abstract ideas and mental processes.”). We do not discern any claimed element for accomplishing the claimed solution that is other than what was generically known for performing those conventional functions. *See Credit Acceptance*, 859 F.3d at 1057 (“[T]he claims do not provide details as to any non-conventional software for enhancing the financing process.”); *see Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) (“Our law demands more” than claim language that “provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it.”); *Elec. Power*, 830 F.3d at 1354 (explaining that claims are directed to an abstract idea where they do not recite “any particular assertedly inventive technology for performing [conventional] functions”). Despite Patent Owner’s assertions that the claim steps add enough to make the claims patentable, we find the bare recitation of the steps performed by a generic processor at a high level of generality is insufficient to supply an inventive concept.

We agree with Petitioner that none of the claims recites a “constrained optimization” problem or “formulating” a constrained optimization problem.

Pet. Reply 18 (citing Ex. 2012 ¶ 85). We further agree with Petitioner that optimization and linear programming are known mathematical concepts. *See id.* 18–19 (citing Ex. 1002 ¶¶ 58–63; Ex. 1040, at 222; Ex. 1042, 46:14–48:16 Ex. 1039 ¶¶ 22–23; Ex. 1001, 26:42–27:28). Thus, even if it were recited, it could not provide “inventive concept.”

In addition, as discussed above, Patent Owner’s reliance on “linking” is unpersuasive because it is not even recited in the claims. And even if it was recited, the record contains more than sufficient evidence to show it was known. *See* Ex. 1002 ¶ 57; Ex. 1011, 17–25; Ex. 1039 ¶¶ 17, 18.

Patent Owner’s argument that the ’649 patent’s claims are similar to the claims in *BASCOM* is not persuasive. In that case (and also *Enfish*), claims were patent-eligible because they were directed to improvements in the way computers and networks carry out their basic functions. *Enfish*, 822 F.3d at 1335–36; *BASCOM*, 827 F.3d at 1348–49; *see Elec. Power*, 830 F.3d at 1354. Here, the focus of the claims is not any improved computer or network, but the improved mathematical analysis; and indeed, the specification makes clear that off-the-shelf computer technology is usable to carry out the analysis. *See, e.g.*, Ex. 1001, Abstract, Fig. 2, 11:56–61, 12:57–64, 13:31–41, 14:6–8, 15:8–8, 20:26–41, 26:42–27:31; Ex. 1002, ¶¶ 23, 43, 55, 56, 58, 62. The claims of the ’649 patent thus fit into the familiar class of claims that do not “focus . . . on [] an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.” *Elec. Power*, 830 F.3d at 1354.

In *In re Board of Trustees of the Leland Stanford Jr. University*, 989 F.3d 1367 (Fed. Cir. 2021) (“*Stanford*”), the Federal Circuit found claims directed to method and computing systems for determining haplotype

phase—the process for determining the parent from whom different versions of a gene are inherited—were ineligible. The Federal Circuit explained that “mathematical algorithms for performing calculations, without more, are patent ineligible under § 101.” *Id.* at 1372. The court explained that it did not matter whether the “the specific application of the steps is novel and enables scientists to ascertain more haplotype information than was previously possible.” *Id.* at 1373 (citing *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a new abstract idea is still an abstract idea.”); *SAP*, 898 F.3d at 1170 (“[P]atent law does not protect such claims, without more, no matter how groundbreaking the advance.”)). The court examined “whether the claimed advance demonstrates an improvement on a technological process or merely enhances an ineligible concept.” *Id.* The court found that the “claimed advance proffered by Stanford, that the process yields a greater number of haplotype phase predictions, may constitute a new or different use of a mathematical process, but we are not persuaded that the process is an improved technological process.” *Id.* The court concluded that the claims were directed to an abstract idea. The same analysis applies here.

Patent Owner raises a number of arguments why the claims are not directed to an abstract idea. None of them is persuasive. First, Patent Owner argues about the novelty of its method of terminating derivatives versus the numerous existing techniques. PO Resp. 8–16, 35–49; PO Sur-Reply 2–18. Patent Owner asserts that prior art methods were lacking because of difficulties in matching transactions. and they failed to realize that differences in subjective valuations of individual transactions could be overcome by “aggregation of different valuations . . . which averages out

such differences” as well as “the risks of change in valuation.” PO Resp. 10; *id.* at 12–13 (explaining “linking” uses “a technique that analyzes the attributes of each transaction to find and link the two versions of the same transaction”). This is insufficient to make the claim patent eligible. *See Content Extraction & Transmission LLC v. Wells Fargo N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (finding “1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory” abstract); *Digitech Image Tech., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (claim that “recites a process of taking two data sets and combining them into a single data set” simply by organizing existing data into a new form is abstract); *OIP Tech., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) (using aggregated data to calculate prices is abstract).

And even accepting Patent Owner’s view that these particular ideas in the OTC derivative are not well-known, routine, or conventional, “[a] claim for a new abstract idea is still an abstract idea,” *SAP*, 898 F.3d at 1163 (quoting *Synopsys*, 839 F.3d at 1151), and “[a]dding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract.” *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

Moreover, Petitioner persuasively shows that the premature termination of derivatives has existed for decades and relies heavily on complex contractual relationships and clauses that were developed decades ago. *See* Ex. 1002 ¶¶ 35–52 (describing various prior art methods of mitigating derivative risks). Patent Owner’s efforts to distinguish these methods simply reinforces the abstract character of these claims. PO

Resp. 35–49. The alleged problems Patent Owner identifies in each of the prior art methods are economic, business, and legal hurdles, not technological challenges. *See id.* Patent Owner asserts that Petitioner misconstrues and misrepresents the Specification. PO Resp. 49–52. The alleged misrepresentations do not affect our analysis. For example, Patent Owner argues that Petitioner misconstrues the Specification’s statements regarding linking to assert that linking is conventional and known. *Id.* at 49–51. Patent Owner also contends that Petitioner misconstrues the ’649 patent regarding the “claimed ‘*generating*’ step.” *Id.* at 51–52. Patent Owner argues that the claimed “generating” “refers to formulating and solving a constrained optimization problems according to the constraints specified.” *Id.* at 51. Patent Owner asserts that while the linear programming necessary to solve the problem was known, the way to “formulate” the problem was not. *Id.* at 51–52. Again, Patent Owner’s arguments are beside the point. The question is not whether these precise techniques of “linking” or “generating” are novel, but whether they are abstract. As Patent Owner’s own arguments regarding the alleged mischaracterizations make clear, the “linking” is matching data records between data sets (*id.* at 49–51 (explaining linking)), and “generating” is setting up and solving a math problem (*id.* at 28–29 (explaining “the ‘*generating*’ step to refer[s] to formulating and solving a constrained optimization problem according to the constraints specified” and “‘Formulating’ a linear constrained optimization problem (i.e., a linear program) refers to ‘expressing a real problem or phenomenon in terms of linear inequalities.’”; 51–52 (explaining generating))), both of which are abstract (a mental process and a mathematical concept, respectively).

Patent Owner repeatedly contends the claims here are similar to the claims determined to be patent eligible in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). PO Resp. 20–26, 31–34, 52–55. There are several problems with this contention. The claims in *McRO* were directed to the creation of something physical—namely, the display of “lip synchronization and facial expressions” of animated characters on screens. *Id.* at 1313. The claimed improvement was to how the physical display operated (to produce better quality images), unlike (what is present here) a claimed improvement in a mathematical and data processing technique to generate more data—a proposal of particular transactions to terminate. The claims in *McRO* thus were not abstract in the sense that is dispositive here. And those claims also avoided being “abstract” in another sense reflected repeatedly in our reviewing court’s cases (based on a contrast not with “physical” but with “concrete”): they had the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it. *Id.* at 1314; *see Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1305–06 (Fed. Cir. 2018); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1265 (Fed. Cir. 2016).

We are persuaded by Petitioner that the additional elements of the claims do not “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78–79). The additional elements must be more than “well-understood, routine, conventional activity.” *Mayo*, 566 at 1298. Thus, as in *SAP America*, “There is, in short, nothing ‘inventive’ about any claim details, individually or in combination, that are not themselves in the realm of abstract ideas.”

SAP Am., 898 F.3d at 1170. In the absence of the required ‘inventive concept’ in application, the claims here are legally equivalent to claims simply to the asserted advance in the realm of abstract ideas—an advance in mathematical techniques in finance—i.e., certain methods of organizing human activity (commercial or legal interactions, such as business relations) and mental processes (observation and evaluation). Accordingly, Petitioner has shown by a preponderance of the evidence that claims 1 and 17 of the ’649 patent are unpatentable under 35 U.S.C. § 101.

Patent Owner does not argue claims 2, 3, 8, 12, and 13 separately. We agree with Petitioner that these claims do not add anything more that would render these claims patent eligible. Ex. 1002 ¶¶ 67, 69, 71. In sum, we also find Petitioner has shown these claims of the ’649 patent are unpatentable under 35 U.S.C. § 101.

6. Representativeness of Claim 1

Patent Owner argues that claim 1 is not representative of the claims. PO Resp. 30, 59–61, 63, 80–83. For example, Patent Owner notes that claim 4 recites “the processor, based on tolerance-limits entered by the involved parties on net present values, maturity dates and/or one or more of the Greeks to identify intervals they consider to be risk-neutral, generates the packages having the linked OTC derivative transactions that aggregated together can be considered to be riskneutral.” *Id.* at 30; *see also id.* at 59–61, 63, 80–81. Similarly, Patent Owner notes that claims 5–7, 10, and 14, recite other constrained optimization problems and corresponding rules. *Id.* at 30; *see also id.* at 60, 63, 81–83.

Patent Owner also argues that claims 9 and 16 recite bilateral “sub-proposals” that are produced from a matching process between three or more

parties. *Id.* at 81–82. Patent Owner asserts that claims 19 and 22 recite an alternate technique and corresponding rules in which the generating step is split into two “determining” steps.⁷ *Id.* at 30; *see also id.* at 83. Patent Owner contends that “[o]ne of ordinary skill in the art reading these claims in light of the specification would understand the first ‘determining’ step to refer to a branching process described in the ’649 patent to identify potential transactions that are particularly promising from the larger built-up web of transactions.” *Id.* at 31. Patent Owner also argues that “[a] person skilled in the art would understand the second ‘determining’ step to refer to formulating and solving a constrained optimization problem using as constraints, or rules, the promising transactions and ‘party-specified tolerance limits’ for the ‘aggregated value’ of the proposal (the proposal being the “second set of linked pairs”).” *Id.* Patent Owner asserts that “[o]ther claims (e.g., claims 15, 18, 20, and 22) recite creating linked OTC derivative transactions.” *Id.*; *see also id.* at 83.

We agree with Petitioner that the remaining claims contain no limitations that, when considered individually or as an ordered combination, transform them into patent eligible applications, and therefore, Petitioner has met its burden of proof. *See* Pet. Reply 25–26. The recitations in these claims are simply more specific versions of calculations performed in

⁷ Claim 19 recites in relevant part: “determining a first set of linked pairs . . . wherein each transaction party . . . has both debts and claims towards other parties in the first set” and then “determining, using the first set of linked pairs, a second set of linked pairs . . . involving at least three parties and . . . wherein the second set . . . has “an aggregated value calculated by the processor within party-specified tolerance limits.” Claim 22 has similar limitations.

claim 1. *See SAP Am.*, 898 F.3d at 1169. For example, claim 4 recites using “tolerance limits entered by the parties” including “net present values, maturity dates and/or one or more Greeks to identify intervals they consider to be risk-neutral” and then using these conditions to generate a package of derivative transactions that “aggregated together can be considered risk-neutral.” Claim 14 depends from claim 1 and adds further constraints on the constrained optimization problem. Claims 5–7 simply add further specificity to the conditions in claim 4. Claims 9 and 16 recite producing bilateral “subproposals.” Claims 10 and 11 depend from claim 9 and recite “a particular way in which constraints are applied to a multilateral optimization problem.” PO Resp. 82.

These limitations simply provide further narrowing of what are still mathematical and fundamental economic operations. They add nothing outside the abstract realm. *See Mayo*, 566 U.S. at 88–89 (stating that narrow embodiments of ineligible matter, citing mathematical ideas as an example, are still ineligible); *buySAFE*, 765 F.3d at 1353 (same).

Claims 19 and 21 recite the two steps detailed above of specific constraints on the optimization problem (as in claims 4–7, 9–11, and 16) as well as an additional step related to identifying certain transactions with particular characteristics (“wherein each transaction party . . . has both debts and claims towards other parties in the first set”). As discussed above, the constraints on the optimization problem are simply abstract mathematical and economic operations. The identification of transactions with particular characteristics—transactions with parties with debts and claims against each other—is simply an abstract mental process. *See Content Extraction*, 776

F.3d at 1347. A process stringing two abstract ideas together, remains abstract. *See RecogniCorp*, 855 F.3d at 1327.

Finally, claims 15, 18, 20, and 22 add that the “generating” (claims 1, 17) or “determining” (claims 19, 21) steps use a linked pair of OTC derivative transaction records “created” by the centralized processor. PO Resp. 83. “As many cases make clear, even if a process of collecting and analyzing information is ‘limited to particular content’ or a particular ‘source,’ that limitation does not make the collection and analysis other than abstract. *SAP Am.*, 898 F.3d at 1168 (citing *Elec. Power*, 830 F.3d at 1353, 1355 (citing cases)). Such is the case here with respect to the content added by each of claims 15, 18, 20, and 22.

Accordingly, we agree with Petitioner that claim 1 is representative of the challenged claims.

7. Conclusion for Subject Matter Eligibility

Petitioner has shown by a preponderance of the evidence that claims 1–22 of the ’649 patent recite an abstract idea, do not integrate the abstract idea into a practical application, and the generic computer components recited in those claims do not transform the claims into patent-eligible applications of that idea. Petitioner has shown by a preponderance of the evidence that claims 1–22 of the ’649 patent are unpatentable under 35 U.S.C. § 101.

E. MOTION TO AMEND

1. Principles of Law

In a covered business method patent review, amended claims are not added to a patent as of right, but rather must be proposed as a part of a motion to amend. 35 U.S.C. § 326(d) (2018). The Board must assess the

patentability of proposed substitute claims “without placing the burden of persuasion on the patent owner.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc); *see also Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-001129, Paper 15 at 3–4 (PTAB Feb. 25, 2019) (precedential). Subsequent to the issuance of *Aqua Products*, the Federal Circuit issued a decision in *Bosch Automotive Service Solutions, LLC v. Matal*, 878 F.3d 1027 (Fed. Cir. 2017) (“*Bosch*”), as well as a follow-up Order amending that decision on rehearing. *See Bosch Auto. Serv. Sols., LLC v. Iancu*, No. 2015-1928 (Fed. Cir. Mar. 15, 2018) (Order on Petition for Panel Rehearing).

In accordance with *Aqua Products*, *Bosch*, and *Lectrosonics*, a patent owner does not bear the burden of persuasion to demonstrate the patentability of the substitute claims presented in the motion to amend. Rather, ordinarily, “the petitioner bears the burden of proving that the proposed amended claims are unpatentable by a preponderance of the evidence.” *Bosch*, 878 F.3d at 1040 (as amended on rehearing); *see Lectrosonics*, Paper 15 at 3–4; Rules of Practice to Allocate the Burden of Persuasion on Motions to Amend in Trial Proceedings Before the Patent Trial and Appeal Board, 85 Fed. Reg. 82,923 (Dec. 21, 2020). In determining whether a petitioner has proven unpatentability of the substitute claims, the Board focuses on “arguments and theories raised by the petitioner in its petition or opposition to the motion to amend.” *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 51 (Fed. Cir. 2020).

Patent Owner’s proposed substitute claims, however, must meet the statutory requirements of 35 U.S.C. § 326(d) and the procedural requirements of 37 C.F.R. § 42.221. *Lectrosonics*, Paper 15 at 4–8. Accordingly, Patent Owner must demonstrate: (1) the amendment proposes

a reasonable number of substitute claims; (2) the proposed claims are supported in the original disclosure (and any earlier filed disclosure for which the benefit of filing date is sought); (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter. *See* 35 U.S.C. § 326(d); 37 C.F.R. § 42.221.

2. Proposed Substitute Claims

Patent Owner provides a listing of its proposed substitute claims its Revised Contingent Motion to Amend (Paper 38), pages 2–10. They are reproduced in their entirety below.

Claim 23 (proposed for claim 1). [a1] A system for exchanging OTC (Over the Counter) derivatives related data comprising:

[a2] a plurality of data input/output and processing stations, an optional central station and a network interconnecting all stations, wherein the data input/output and processing stations are operable by parties participating in OTC derivatives related contracts for transmitting and receiving, through the network, trade details for nonstandardized existing OTC derivative transactions carried out with other parties, wherein the ~~optional~~ central station is for receiving the trade details over the network from the data input/output and processing stations, wherein the existing OTC derivative transactions include linked OTC derivative transactions for which the trade details are available for both of the parties to the respective existing OTC derivative transaction;

[a3] wherein ~~at least one of the data input/output and processing stations or optional~~ central station includes a processor, wherein the processor is operable for generating, using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative

transactions having designated maturity dates, wherein each of the proposals includes at least three involved parties, and wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before their respective designated maturity dates, according to parameters set by the involved parties;

[a4] wherein the at least one station provides the premature termination and assignment proposal packages to the involved parties for their approval.

Claim 24 (proposed for claim 2). [a] The system of claim 423, wherein the trade details transmitted via the data input/output and processing stations include designated maturity dates, mark-to-market values and risk characteristics.

Claim 25 (proposed for claim 9). [a] The system of claim 224, wherein several bilateral sub-proposals are produced from a matching process between three or more of the involved parties;

[b1] wherein said parameters are set by three or more involved parties and comprise:

[b2] a first set of rules that define intervals which are risk-neutral for a particular party as a function of differences in that party's aggregated net exposure to one or more of the Greeks for a particular plurality of said existing OTC derivative transactions; and

[b3] a second set of rules that define intervals which are risk-neutral for a particular party as a function of differences in

that party's aggregated mark-to market valuation for a particular plurality of said existing OTC derivative transactions; and

- [c] wherein said generating of said proposals is at least by evaluating a plurality of said existing linked OTC derivative transactions against said first and second sets of rules to generate a package, of a plurality of linked OTC derivative transactions, where the premature termination or assignment of the transactions of the package in total is risk-neutral to each of the involved parties according to the rules.

Claim 26 (proposed for claim 14). [a] ~~The system of claim 123, arranged to produce a list of all OTC derivative transactions~~ wherein said parameters are set by three or more involved parties and comprise a set of rules that define intervals wherein there is substantially no financial loss for a particular party as a function of differences in that party's the individual or aggregated mark-to-market valuation of trades are such, that there is substantially no financial loss to both of the involved parties to terminate the OTC derivative transactions, which happens then both of the parties' valuations are within both of the parties' tolerance ranges for a particular plurality of said existing OTC derivative transactions; and

- [b] wherein said generating of said proposals is at least by evaluating a plurality of said existing linked OTC derivative transactions against said set of rules to generate a package, of a plurality of linked OTC derivative transactions, where the premature termination or assignment of the transactions of the package in total results in substantially no financial loss to each of the involved parties according to the rules.

Claim 27 (proposed for claim 16). [a] The system of claim 123, wherein several bilateral sub-proposals are produced from a matching process between three or more of the involved parties;

- [b] wherein said parameters are set by three or more involved parties and comprise a set of rules that define intervals which are risk-neutral for a particular party as a function of differences in that party's aggregated net exposure to one or more of the Greeks for a particular plurality of said existing OTC derivative transactions, each interval also corresponding to a time bucket; and
- [c] wherein said generating of said proposals is at least by evaluating a plurality of said existing linked OTC derivative transactions against said set of rules to generate a package, of a plurality of linked OTC derivative transactions, where the premature termination or assignment of the transactions of the package in total is risk-neutral to each of the involved parties according to the rules.

Claim 28 (proposed for claim 17). [a1] A computer-implemented method for exchanging OTC (Over the Counter) derivatives related data, wherein the OTC derivatives related data describe OTC derivative transactions having designated maturity dates, the method comprising:

- [a2] transmitting trade details by parties involved in OTC derivatives related contracts using at least one of a plurality of data input/output and processing stations, wherein a network interconnects the data input/output and processing stations and a ~~n-optional~~ central station, wherein the transmitting of the trade details by the parties is through the network to ~~each other or~~ the central station for OTC derivative transactions done with other parties, and wherein each party's transmitted trade details are for non-standardized existing OTC derivative transactions carried out with other parties, wherein the existing OTC derivative transactions include linked OTC derivative transactions for which the trade details are available for both of the parties to the respective existing OTC derivative transaction;
- [a3] generating, by a processor of ~~at least one of the data input/output and processing stations or~~ the central station,

using the existing linked OTC derivative transactions, premature termination and assignment proposals consisting of packages of a plurality of linked OTC derivative transactions involving at least three parties and having designated maturity dates, wherein the proposals are for premature termination or assignment of the linked OTC derivative transactions of the packages at a date at which there is no prescribed value and no prescribed method of determining a value at which the termination or assignment of the linked OTC derivative transactions of the packages should take place, and at which there is no obligation for the involved parties to make premature terminations or premature assignments of the linked OTC derivative transactions of the packages, wherein there is substantially no financial loss to all of the involved parties to terminate or assign prematurely before their respective designated maturity dates, according to parameters set by the involved parties; and

- [a4] providing, by the at least one station, the premature termination and assignment proposal packages to the involved parties for their approval;
- [b1] wherein said parameters are set by three or more involved parties and comprise:
- [b2] a first set of rules that define intervals which are risk-neutral for a particular party as a function of differences in that party's aggregated net exposure to one or more of the Greeks for a particular plurality of said existing OTC derivative transactions; and
- [b3] a second set of rules that define intervals wherein there is substantially no financial loss for a particular party as a function of differences in that party's aggregated mark-to-market valuation for a particular plurality of said existing OTC derivative transactions; and
- [c] wherein said generating of said proposals comprises evaluating a plurality of said existing linked OTC derivative transactions against said first and second sets of rules to generate a package, of a plurality of linked OTC

derivative transactions, where the premature termination or assignment of the transactions of the package in total is risk-neutral to, and results in substantially no financial loss to, each of the involved parties according to the rules.

3. Statutory and Regulatory Requirements

As noted above, Patent Owner’s proposed substitute claims must meet the statutory requirements of 35 U.S.C. § 326(d) and the procedural requirements of 37 C.F.R. § 42.221. We address each of these requirements in turn.

a. Reasonable Number of Substitute Claims

A motion to amend must “propose a reasonable number of substitute claims.” 35 U.S.C. § 326(d)(1)(B); *see* 37 C.F.R. § 42.221(a)(3) (“A motion to amend may cancel a challenged claim or propose a reasonable number of substitute claims.”). Petitioner challenges claims 1–22 of the ’649 patent, and Patent Owner proposes substitute claims 23–28 to replace original claims 1, 2, 9, 14, 16, and 17. Revised Mot. 2–8. Patent Owner proposes no more than one substitute claim for each challenged claim. “There is a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.” *Lectrosonics*, Paper 15 at 4; *see* 37 C.F.R. § 42.221(a)(3). Petitioner does not argue otherwise. *See generally* Opp. Therefore, we determine that Patent Owner proposes a reasonable number of substitute claims.

b. Respond to a Ground of Unpatentability

“A motion to amend may be denied where . . . [t]he amendment does not respond to a ground of unpatentability involved in the trial.” 37 C.F.R. § 42.221(a)(2)(i). Patent Owner responds to the ground of unpatentability from the Institution Decision, arguing that proposed substitute claims 23–28

recite patent-eligible subject matter under 35 U.S.C. § 101. Rev. Mot. 14–25. Petitioner’s argument that the amendment does not respond to the ground of unpatentability (Opp. 4–25) is really that the proposed amendments are insufficient to overcome the § 101 ground. We consider that argument in the Section II.E.3.e below. Thus, we determine that the Revised Motion responds to a ground of unpatentability.

c. Scope of the Claims

Patent Owner asserts that the substitute claims are each narrower than the corresponding original claim. Revised Mot. 8–10. Petitioner does not dispute this. *See generally* Opp. We determine that the proposed substitute claims do not attempt to expand the scope of the challenged claims.

d. Support in the Original Disclosure

A motion to amend may not present substitute claims that introduce new subject matter. 35 U.S.C. § 326(d); 37 C.F.R. § 41.221(a)(2)(ii). New matter is any addition to the claims without support in the original disclosure. *See TurboCare Div. of Demag Delaval Turbomach. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001) (“When [an] applicant adds a claim . . . the new claim[] . . . must find support in the original specification.”); *see also Lectrosonics*, Paper 15 at 7 (“the Board requires that a motion to amend set forth written description support in the originally filed disclosure of the subject patent for each proposed substitute claim”).

Petitioner argues that Patent Owner has failed to show adequate support in the original application for the new limitations of “non-standardized,” “substantially no financial loss,” and “intervals.” Opp. 2–4

Because we determine that the proposed substitute claims are directed to patent-ineligible subject matter (see Section II.E.4 *infra*), we need not

determine whether there is adequate support for “non-standardized,” “substantially no financial loss,” or “intervals.” *Cf. Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. Apr. 30, 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

Accordingly, we decline to determine whether the amendment adds new matter to the ’649 patent.

4. Patent Eligibility

We determine that Patent Owner’s Motion to Amend should be denied because Petitioner has shown by a preponderance of the evidence that the proposed amended claims are unpatentable as directed to patent-ineligible subject matter under § 101.

a. Whether the Claims Recite a Judicial Exception

We agree with Petitioner that the proposed substitute claims remain directed to the abstract idea of a mental process, in particular “simplifying a portfolio through premature termination of certain OTC derivatives.” Opp. 5. We further agree with Petitioner that the concept of simplifying an OTC derivatives portfolio through premature termination falls within the category of abstract ideas, in particular, methods of organizing human activity (fundamental economic practices and commercial or legal interactions, such as business relations) and mental processes (observation and evaluation). *Id.* For example, proposed substitute claim 23 only adds the limitation that the

transaction data processed by the system be for “non-standardized”⁸ derivatives. PO Reply 4. Limiting the claims to processing a particular type of data does not render them less abstract. *See SAP Am.*, 898 F.3d at 1168; *see also In re Chorna*, 656 F. App’x 1016, 1020 (Fed. Cir. 2016) (affirming that “financial instrument[s]” are abstract because “at its source, [it] is an agreement—a meeting of the minds, between the parties each having an interest in monetary value being traded”). Moreover, as for Patent Owner’s contention that the amendment to proposed substitute claim 23 makes “the ‘central station’ not optional and the centralized ‘processor’ at the ‘central station,’” this does not change our analysis. Rev. Mot. 14–15. The centralized processor does not change the result under Step 2A, prong 1. *See Bascom*, 827 F.3d at 1348–49 (finding claims were still directed to the abstract idea under Step 1 of the *Alice* framework). Proposed substitute

⁸ We note that Patent Owner has not provided a consistent or clear definition or even a way to determine the metes and bounds of the term “non-standardized . . . OTC derivative transactions.” *Compare* PO Sur-Reply 3 *with id.* at 7 (contending that FX-Forwards can be “standardized” and “non-standardized,” but providing no explanation how to tell the difference). At the hearing, Patent Owner offered a definition for non-standardized of “individually negotiated and tailor made.” Tr. 93:21–94:1. Patent Owner then proceeded to carve out various contract terms that it contended could be individually negotiated, but apparently fall outside this definition. *See* Tr. 95:5–96:1. Although there may be support for “individually negotiated and tailor made,” we have difficulty seeing any support for Patent Owner’s various seemingly *ad hoc* carve-outs for contract terms that can be different and individually negotiated, but fall outside of its definition. *Id.* We do not determine whether Patent Owner’s construction (and its addenda) is the correct construction. Instead, we determine that for purposes of this Decision, applying any of Patent Owner’s various definitions will arrive at the same result, so we do not need to resolve the precise definition of the term or whether such a definite construction of the term is possible.

Claim 24 depends from claim 23 and is similar to claim 2, which we found ineligible above.

Proposed substitute claim 25 depends from proposed substitute claim 24 and recites “parameters are set by three or more involved parties,” and Patent Owner argues that the parameters “comprise not one but two specific sets of rules: one set of rules ‘that define intervals which are risk-neutral for a particular party as a function of differences in that party’s aggregated net exposure to one or more of the Greeks for a particular plurality of said existing OTC derivative transactions’ and one set of rules ‘that define intervals which are risk-neutral for a particular party as a function of differences in that party’s aggregated mark-to-market valuation for a particular plurality of said existing OTC derivative transactions.’” Rev. Mot. 16. Patent Owner also notes that the “claim generates proposals by ‘evaluating a plurality of said existing linked OTC derivative transactions against said first and second sets of rules to generate a package, of a plurality of linked OTC derivative transactions, where the premature termination or assignment of the transactions of the package in total is risk-neutral to each of the involved parties according to the rules.’” *Id.* Patent Owner argues that “[t]he claim language here tracks the language in the *McRO* claims, which the Federal Circuit found recite patent-eligible subject matter....” *Id.* at 16–17.

Patent Owner contends that:

The rules of Substitute Claim 25, in the overall structure of the claim, improve computers as tools for generating premature termination and assignment proposals for OTC (non-standardized) derivatives. For example, prior art commercially-available computerized systems such as FXNET and ECHO only worked on standardized derivatives and generally attempted to

reduce risk by netting payments owed under such standardized derivatives as opposed to prematurely terminating the derivatives themselves, as noted.

Id. at 17.

Proposed substitute claim 26 as amended recites rules and the use of rules “similar to Claim 25.” Rev. Mot. 23. However, in proposed substitute claim 26, there is only one set of rules: a “set of rules that define intervals wherein there is substantially no financial loss for a particular party as a function of differences in that party’s aggregated mark-to-market valuation for a particular plurality of said existing OTC derivative transactions.” *Id.* This set of rules is similar to the second set of rules in proposed substitute claim 25, but in proposed substitute claim 25, the rules “define intervals which are risk-neutral for a particular party,” whereas in proposed substitute claim 26, they “define intervals wherein there is substantially no financial loss for a particular party.” *Id.* at 23–24.

Proposed substitute claim 27 as amended recites rules and the use of rules similar to proposed substitute claim 25. *Id.* at 24–25. However, proposed substitute claim 27 only uses the first set of rules from proposed substitute claim 25 but adds that “each interval also correspond[s] to a time bucket.” *Id.* at 25. Proposed substitute claim 28 as amended combines the amendments of proposed substitute claim 23 with the first set of rules from proposed substitute claim 25 and the set of rules from proposed substitute claim 26. *Id.*

We determine that proposed substitute claim 25 is representative.

The system of claim 224, *wherein several bilateral sub-proposals are produced from a matching process between three or more of the involved parties;*

- [b1] *wherein said parameters are set by three or more involved parties and comprise:*
- [b2] *a first set of rules that define intervals which are risk-neutral for a particular party as a function of differences in that party's aggregated net exposure to one or more of the Greeks for a particular plurality of said existing OTC derivative transactions; and*
- [b3] *a second set of rules that define intervals which are risk-neutral for a particular party as a function of differences in that party's aggregated mark-to market valuation for a particular plurality of said existing OTC derivative transactions; and*
- [c] *wherein said generating of said proposals is at least by evaluating a plurality of said existing linked OTC derivative transactions against said first and second sets of rules to generate a package, of a plurality of linked OTC derivative transactions, where the premature termination or assignment of the transactions of the package in total is risk-neutral to each of the involved parties according to the rules.*

Rev. Mot. 4 (emphasis added).

The combination of the elements italicized above recites the concept of simplifying a trade portfolio through premature termination of certain transactions. The claimed system accomplishes this through collecting information, linking related information together, and then using mathematical techniques on the information to generate a “proposal package” of transactions for “termination and assignment.” This is all a mental process, an example of an abstract idea.

Patent Owner's efforts to mimic the claim language in *McRO* does not change the result here. To begin with, the Supreme Court has cautioned against patent eligibility turning on the claim drafter's art. *See Flook*, 437 U.S. at 593 (stating that patent eligibility does not turn “on the draftsman's

art”). Thus, merely parroting some language of an eligible claim of a completely different invention does not make *the claims for this invention* any less abstract. More importantly, the fact that the language is similar does not change the fundamental differences between the claimed invention here and the invention that was claimed in *McRO*.

Proposed substitute claims 26, 27, and 28 are similar to proposed substitute claim 25 and add similar limitations that do not take the claim outside the realm of abstract ideas for Step 1 of the *Alice* inquiry.

Accordingly, Petitioner has shown that the proposed substitute claims recite a concept that falls within the categories of abstract ideas—specifically, certain methods of organizing human activity (commercial or legal interactions, such as business relations) and mental processes (observation and evaluation).

b. Additional Elements that Integrate the Judicial Exception

Patent Owner does not contend that there are additional elements that integrate the judicial exception into a practical application beyond those arguments considered above. As we explain in detail above, we determine that Petitioner has shown that the claims do not integrate the judicial exception into a practical application. *See* MPEP 2106.04(d).

c. Whether Any Additional Elements Recite Significantly More

Petitioner argues “the substitute claims simply recite commonly known mathematical elements or generic computer components to an abstract idea.” Opp. 10. Petitioner asserts “[t]hese elements therefore do not add significantly more to the claimed abstract idea, as *Alice* demands.” *Id.* Patent Owner relies on *Bascom* in support of its argument that “[t]he Federal Circuit has held that where prior systems were either local and flexible, or

centralized but inflexible, a centralized yet flexible implementation can impart an inventive concept.” Rev. Mot. 15. We agree with Petitioner, however, that “*Bascom* relates to an improvement of the computer itself where the claims are directed to a filtering tool ‘at a specific location’ that was not technically achievable prior to the invention. *Bascom*, 827 F.3d at 1350. As Petitioner explains, “[i]t is this specific claimed implementation that improved the computerized system thereby overcoming the technical problems in the prior art. Opp. 11 (citing *Bascom*, 827 F.3d at 1350). We agree with Petitioner that, in contrast, the proposed substitute claims 23–28 do not improve the computer, but rather recite the abstract idea of simplifying a portfolio by prematurely terminating trades (i.e. an economic principle) and performing them on a generic computer using the Internet. *Id.*

Patent Owner’s contentions that the claims improve the functioning of a computer have no support in the record. As we explained above, the only improvement described in the ’649 patent is an improved mathematical algorithm. We agree with Petitioner that these claims are, therefore, more like the claims in *OIP Technology*, where the claims were found patent ineligible for utilizing a centralized system to implement “the abstract idea of offer-based price optimization on generic computer components using conventional computer activities.” *Bascom*, 827 F.3d at 1351 (citing *OIP Tech.*, 788 F.3d at 1363); *see also In re Chorna*, 656 F. App’x at 1021 (finding claims ineligible as “nothing significantly more than the terms of a contract.”).

For example, proposed substitute claim 23 adds only a “centralized” processor and transaction data for “non-standardized” OTC derivatives. Neither feature includes an inventive concept. A central station is simply a

generic computer function that merely invokes a computer as a tool which cannot elevate the claim to one that is patent eligible. “[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 573 U.S. at 223 (internal citations omitted). Petitioner has further demonstrated that the prior art Multinet and ECHO systems were centralized systems, making this feature routine and common. Ex. 1039 ¶¶ 20–21.

Second, requiring the OTC derivatives to be “non-standardized” does not include an inventive concept. *See* Rev. Mot. 8–10. We agree with Petitioner that terminating derivatives that fit within Patent Owner’s definition of “non-standardized” was routine and conventional at the time of the filing. *See* Ex. 1043 ¶¶ 8–10; Ex. 1039 ¶¶ 11, 12, 15, 16; Ex. 1032, 27–28; Ex. 1007, 13 n.9 (noting FX-Forwards were OTC derivatives); Ex. 1017, 54–55. We find persuasive the testimony of Mr. Shaw that the FX rate and collateralization terms would be non-identical and individually negotiated and tailor made. Ex. 1043 ¶¶ 8–10. Thus, we conclude Petitioner has shown by a preponderance of the evidence that proposed substitute claim 23 lacks an inventive concept. The same analysis applies to proposed substitute claim 24.

With respect to proposed substitute claim 25, Petitioner argues that the new features of proposed substitute claim 25 “lack an inventive concept because they are: i) mathematical concepts; ii) routinely and universally used prior to the patent’s filing; and iii) preempt the entire field.” Opp. 15. We agree with Petitioner that the newly-recited terms in proposed substitute claim 25 “rules that define intervals which are risk-neutral for a particular party,” “time bucket,” “parameters,” “aggregated net exposure to one or

more of the Greeks,” and “aggregated mark-to-market valuation,” are universal to every premature termination process carried out long before the patent’s filing date, and therefore do not add an inventive step.

RecogniCorp, 855 F.3d at 1327. As Petitioner’s persuasive evidence demonstrates, parties using either ECHO or Multinet considered parameters such as credit risks of a party, and limits on market risk (e.g., “NPV sub limit” in ECHO), in view of that party’s acceptable parameters for premature termination of OTC derivatives (e.g., FX-Forwards). Ex. 1032, 12–13, 43–47; Ex. 1007, 13, n. 9; Ex. 1039 ¶ 29; Ex. 1043 ¶ 11.

As for the limitations relating to the “Greeks,” the Specification acknowledges that the Greeks were well-known, and the evidence of record shows that the Greeks were routinely used to manage the market risks of OTC derivatives. Ex. 1017, 50–56; Ex. 1039 ¶ 27; Ex. 1043 ¶¶ 11–13; Ex. 1042, 190:18–24. We agree with Petitioner and Mr. Shaw that Patent Owner’s efforts to limit the ECHO and Multinet to “credit risks” and not “market risks” is incorrect because “credit risk” necessarily includes an evaluation of both mark-to-market risks and aggregated net exposures to Greeks that one counterparty holds with respect to another. Ex. 1017, 54–56; Ex. 1043 ¶ 11; Ex. 1001, 2:54–63, 5:66–6:8 (linking market and credit risks).

Regarding generating a proposal, Petitioner has shown that Exhibit 1032 demonstrates that the commercially-available SWIFT Advisory Netting service prepared a proposal listing trades eligible for netting and sent this proposal to the involved parties for their review and approval. Ex. 1032, 17, 39, 41, 45–47; Ex. 1039 ¶¶ 17–21; Ex. 1002 ¶¶ 34, 35, 37, 44, 71; Ex. 1010, 41; Ex. 1011, 11–15, 17–25; Ex. 1008, 25. Regardless, generating

a “proposal” is simply a generic computer function of displaying information that does not add an inventive concept. *See Elec. Power*, 830 F.3d 1353–54; *see also Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324 (Fed. Cir. 2016).

Patent Owner argues that the rules of proposed substitute claim 25 “improve computers as tools for generating premature termination and assignment proposals for OTC (non-standardized) derivatives” and “the claim and corresponding rules set forth a particular, specific way to generate premature termination proposals for OTC derivatives and the rule capture how the embodiment generates high quality proposals. Rev. Mot. 17–20. Patent Owner’s argument fails because, unlike cases where the claims involve practical, technological improvements, proposed substitute claim 25 does not extend beyond improving mathematically generated termination proposals for financial derivative transactions. *See, e.g., McRO*, 837 F.3d at 1315 (“The claimed process uses a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters.”); *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1304 (Fed. Cir. 2018) (finding patent eligible a claim drawn to a behavior-based virus scan that protects against viruses that have been “cosmetically modified to avoid detection by code-matching virus scans”); *Enfish*, 822 F.3d at 1330, 1333 (discussing patent eligible claims directed to “an innovative logical model for a computer database” that included a self-referential table allowing for greater flexibility in configuring databases, faster searching, and more effective storage); *CardioNet, LLC v. InfoBionic, Inc.*, 955 F.3d 1358, 1368 (Fed. Cir. 2020) (explaining that the claims at issue focus on a specific

means for improving cardiac monitoring technology; they are not “directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery” (quoting *McRO*, 837 F.3d at 1314)); *Koninklijke KPNN.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150–51 (Fed. Cir. 2019) (claims were step-one eligible given their “specific implementation of varying the way check data is generated,” which was a technological improvement—indeed, an undisputed one—over the prior art’s ability to detect systematic errors).

Here, the problems at issue are business problems, not technical problems. *See* Ex. 1001, 7:1–60 (summarizing the problems in the art including: (1) “Both the original counterparties need to agree to early termination”; (2) “The counterparties need to establish they are talking about the same trade” (3) “The counterparties need to agree on the value of the trade”; (4) “A bank does not want to change its market position”; (5) “A bank does not want to make a large cash payment”; and (6) “A bank does not want to take the initiative for an early termination, since the value of the contract needs to be negotiated in an early termination. . .”). Unlike the technological improvements made in the cases found patent eligible, the improvement in derivative termination or assignment proposals alleged here does not qualify as an improvement to a technological process; rather, it is merely an enhancement to abstract fundamental economic principles and abstract mathematical calculations. *See Synopsys*, 839 F.3d at 1151 (“[A] claim for a new abstract idea is still an abstract idea.”). The different use of a mathematical calculation or fundamental economic process, even one that yields different or better results, does not render patent eligible subject matter. *See In re Board of Trustees of Leland Stanford Jr. Univ.*, 991 F.3d

1245, 1251 (Fed. Cir. 2021) (“The different use of a mathematical calculation, even one that yields different or better results, does not render patent eligible subject matter.”). The rephrasing of the claims to mimic the claims in *McRO* does not make them less directed to an abstract idea—specifically, certain methods of organizing human activity (commercial or legal interactions, such as business relations) and mental processes (observation and evaluation).

Finally, we note that proposed substitute claim 25 recites “parameters” and first and second “rules that define intervals which are risk-neutral for a particular party.” We agree with Petitioner that these recited “rules” are universal to all premature terminations thereby preempting the entire field. Ex. 1043 ¶ 11; *McRO*, 837 F.3d at 1314.

Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that proposed substitute claim 25 lacks inventive concept.

Proposed substitute claim 26 presents a subset of the limitations already discussed above with respect to proposed substitute claim 25. For the reasons discussed above with respect to proposed substitute claim 25, Petitioner has shown that claim 26 lacks inventive concept.

Petitioner argues that proposed substitute claim 27 includes a limitation from instituted claim 16 requiring “several bilateral subproposals . . . produced from a matching process between three or more of the involved parties,” which is an abstract mental process of collecting and presenting information that are treated as mental processes. Opp. 24. We agree with Petitioner that this does not add inventive concept as we found above with respect to claim 16. Petitioner asserts that other than the addition of “time

bucket[s],” this substitute claim is substantially identical to proposed substitute claim 25 and should be rejected for the same reasons discussed above with respect to proposed substitute claim 25. *Id.* Petitioner argues that time buckets do not add an inventive concept because, by themselves, they represent mathematical manipulations, i.e., simply separating risks associated with different time intervals over the life of the transactions. *Id.* (citing Ex. 1039 ¶¶ 31–33). We agree with Petitioner that such a calculation is certainly an abstract concept (a mental step) that can be done in the user’s mind or with pen and paper, i.e., creating virtual buckets for risks associated with particular time periods during the life of the transaction. *See* Ex. 1039 ¶¶ 31–33. Moreover, using time buckets was routinely practiced in the industry and, Petitioner’s expert testified to routinely using this process. *Id.* Incorporating this feature into the rules articulated in proposed substitute claim 25 is not sufficient to transform proposed substitute claim 27 into patent eligible subject matter. As with proposed substitute claim 25, proposed substitute claim simply seeks to use computers as tools to solve particular mathematics problems related to the fundamental economic concept of early derivative termination. Therefore, for these reasons and the reasons stated above with respect to proposed substitute claim 25, Petitioner has shown sufficiently that proposed substitute claim 27 taken as a whole lacks inventive concept.

Proposed substitute claim 28 “simply combine[s] the ‘aggregated net exposure to one or more of the Greeks’ rules of [proposed] substitute claim 25 and the ‘aggregated mark-to-market valuation’ rules of [proposed] substitute claim 26” (Ex. 2019 ¶ 45) and, therefore, is not

inventive for the same reasons described above for proposed substitute claims 25 and 26.

d. Conclusion as to Patent Eligibility for the Amended Claims

In summary, we determine that proposed substitute claims 23–28 recite an abstract idea, do not integrate the abstract idea into a practical application, and the generic computer components recited in those claims do not transform the claims into patent-eligible applications of that idea. Petitioner has shown by a preponderance of the evidence that proposed substitute claims 23–28 are unpatentable under 35 U.S.C. § 101. Accordingly, we *deny* Patent Owner’s Revised Contingent Motion to Amend.

III. CONCLUSION⁹

In summary,

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–22	101	Eligibility	1–22	
Overall Outcome			1–22	

⁹ 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. 16,654 (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 the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

Motion to Amend Outcome	Claims
Substitute Claims Proposed in the Amendment	23–28
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	23–28
Substitute Claims: Not Reached	

IV. ORDER

For the reasons given, it is:

ORDERED, that Petitioner *has shown* based on a preponderance of evidence, that claims 1–22 of U.S. Patent 7,613,649 B2 are unpatentable;

FURTHER ORDERED that Patent Owner’s Revised Contingent Motion to Amend is *denied*; and

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

CBM2020-00011
Patent 7,613,649 B2

PETITIONER:

PATENT OWNER: