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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte MICHEL ADAR, EARL STAHL, and
NICOLAS M. BONNET

_____

Appeal 2018-005370
Application 10/980,440
Technology Center 3600

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Before JENNIFER S. BISK, LARRY J. HUME, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges.*

HUME, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant,[1] Michel Adar et al., appeal
from the Examiner's decision rejecting claims 32, 35–37, 39, 40, 43–45, 47,
48, 51–53, and 55–58, which are all claims pending in the application.
Appellant has canceled claims 1–31, 33, 34, 38, 41, 42, 46, 49, 50, and 54.
See generally Appeal Br. 16 *et seq*. (Claims App.). We have jurisdiction
under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37
C.F.R. § 1.42(a). Appellant identifies the real party in interest as Oracle
International Corporation. Appeal Br. 1.

CLAIMED SUBJECT MATTER[2]

The claims are directed to a method and apparatus for optimizing the results produced by a prediction model. *See* Spec. 1 (Title). In particular, Appellant's disclosed embodiments and claimed invention

> relate[] to the general technical area of modeling interactions between various entities, such as a customer and a telephone call center. More specifically, it relates to mechanisms for using the results produced from such modeling to determine which action to take with respect to a particular entity, such as a customer having a particular profile.

Spec. 1, ll. 19–23.

Claim 1, reproduced below, is representative of the subject matter on appeal:

> 32.   A method comprising:
>
> collecting, from one or more servers, context data generated in response to one or more interactions between the one or more servers and one or more client devices, the context data including a plurality of input attributes for a plurality of predictive models stored in a database;
>
> executing, by a distributed learning system with one or more processors associated with one or more computer systems, the plurality of predictive models based on the plurality of input attributes collected with the context data to generate a plurality of performance metrics, each respective predictive model of the plurality of predictive models evaluating a set of one or more key performance indicators against one or more of the plurality of input-attributes and providing a respective metric quantifying

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[2] Our decision relies upon Appellant's Appeal Brief ("Appeal Br.," filed Dec. 1, 2017); Reply Brief ("Reply Br.," filed May 2, 2018); Examiner's Answer ("Ans.," mailed Mar. 2, 2018); Final Office Action ("Final Act.," mailed Apr. 18, 2017); and the original Specification ("Spec.," filed Nov. 2, 2004) (claiming benefit of US 60/550,887, filed Mar. 3, 2004).

the set of one or more key performance indicators according to a predetermined unit associated with the set of one or more key performance indicators, the plurality of predictive models including a first predictive model that provides a first metric quantifying a first key performance indicator according to a first unit of measurement and a second predictive model that provides a second metric quantifying a second key performance indicator according to a second unit of measurement, the first key performance indicator representing a goal that is competing with the second key performance indicator, the first unit of measurement representing a different unit of measurement than the second unit of measurement;

wherein at least one predictive model of the plurality of predictive models evaluates a non-likelihood of acceptance goal against one or more of the plurality of input attributes;

for each respective possible offer of a plurality of possible offers, generating, with the one or more processors associated with the one or more computer systems, a plurality of normalized metrics based on a normalization of two or more respective metrics in the plurality of performance metrics across a plurality of different units represented in all key performance indicators in the set of one or more key performance indicators and according to feedback collected from prior executions of the plurality of predictive models, a value of a normalized metric for a respective key performance indicator being different from a value of a metric for the respective key performance indicator before normalization, wherein determining the plurality of normalized metrics based on the normalization of the two or more respective metrics in the plurality of performance metrics comprises assigning a point value for each key performance indicator of each predictive model evaluating input attributes associated with the respective possible offer, wherein the point value corresponds to a percentage of a previously determined corresponding goal metric value that is less valuable than a current goal metric value, the plurality of normalized metrics including a first normalized version of the first metric and a second normalized version of the second metric; and

generating, with the one or more processors associated with the one or more computer systems, a combined metric quantifying a predicted outcome of generating and presenting, to a particular client device accessing a web server, a web page including the possible offer, in a series of sequentially presented web pages, the combine [sic] metric generated using a total sum of each of the plurality of normalized metrics as weighted by a corresponding predetermined weight;

comparing, with the one or more processors associated with the one or more computer systems, the total sum quantifying each predicted outcome of generating and presenting different respective web pages including different respective possible offers in the plurality of possible offers to select a particular web page with the predicted outcome having the highest total sum;

generating and presenting, with the one or more processors associated with the one or more computer systems, the particular web page in the series of sequentially presented web pages and updating at least one predictive model of the plurality of predictive models based, at least in part, on an interaction with a user with the particular web page.

REJECTION

Claims 32, 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58 stand rejected under 35 U.S.C. § 101 as being directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or abstract idea) without significantly more. Final Act. 4.

CLAIM GROUPING

Based on Appellant's arguments (Appeal Br. 8–15) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of the patent-

ineligible subject matter rejection of claims 32, 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58 on the basis of representative method claim 32.[3]

ISSUE

Appellant argues (Appeal Br. 8–15; Reply Br. 1–4) the Examiner's rejection of claim 32 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

Under the USPTO's Revised Guidance, informed by our governing case law concerning 35 U.S.C. § 101, is claim 32 patent-ineligible under § 101?

PRINCIPLES OF LAW

A.   35 U.S.C. § 101

An invention is patent-eligible if it is a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101.[4] However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract

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[3] "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellant does not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

[4] This threshold analysis of whether a claim is directed to one of the four statutory categories of invention, i.e., a process, machine, manufacture, or composition of matter, is referred to as *"Step 1"* in the USPTO's patent-eligibility analysis under § 101. MPEP § 2106.

ideas" are not patentable. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (brackets in original) (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 217–18 (2014) (citing *Mayo*, 566 U.S. at 75–77). 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" (*Diehr*, 450 U.S. at 191); "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 Supreme Court held "[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 Supreme 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.").

Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, and mathematical formulas or relationships. *Alice*, 573 U.S. at 217–21. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Id.* at 217 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

If the claim is "directed to" an abstract idea, we turn to the second step 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 (citation omitted). "A claim

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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.*

B.   USPTO Revised Guidance

The PTO recently published revised guidance in the Federal Register concerning the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (hereinafter "Revised Guidance") (https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf).

Under the Revised Guidance, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes);[5] and

> (2) additional elements that integrate the judicial exception into a practical application (*see* Manual for Patent Examining Procedure ("MPEP") §§ 2106.05(a)–(c), (e)–(h)).[6]

See Revised Guidance 52–53.

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[5] Referred to as "*Revised Step 2A, Prong 1*" in the Revised Guidance (hereinafter "*Step 2A(i)*").

[6] Referred to as "*Revised Step 2A, Prong 2*" in the Revised Guidance (hereinafter "*Step 2A(ii)*").

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

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or

> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.[7]

See Revised Guidance 56.

Step 2A(i) – Abstract Idea

Informed by our judicial precedent, the Revised Guidance extracts and synthesizes key concepts identified by the courts as abstract ideas to explain that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation:

> (a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;

> (b) Certain methods of organizing human activity — fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and

> (c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

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[7] Items (3) and (4) continue to be collectively referred to as "*Step 2B*" of the Supreme Court's two-step framework, described in *Mayo* and *Alice*.

Revised Guidance 52 (footnotes omitted).

Under the Revised Guidance, if the claim does not recite a judicial exception (a law of nature, natural phenomenon, or subject matter within the enumerated groupings of abstract ideas above), then the claim is patent-eligible at *Step 2A(i)*. This determination concludes the eligibility analysis, except in situations identified in the Revised Guidance.[8]

However, if the claim recites a judicial exception (i.e., an abstract idea enumerated above, a law of nature, or a natural phenomenon), the claim requires further analysis for a practical application of the judicial exception in *Step 2A(ii)*.

Step 2A(ii) – Practical Application

If a claim recites a judicial exception in *Step 2A(i)*, we determine whether the recited judicial exception is integrated into a practical application of that exception in *Step 2A(ii)* 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.

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[8] In the rare circumstance in which an examiner believes a claim limitation that does not fall within the enumerated groupings of abstract ideas should nonetheless be treated as reciting an abstract idea, the procedure described in of the Guidance for analyzing the claim should be followed. *See* Revised Guidance, Section III.C.

The seven identified "practical application" sections of the MPEP,[9] cited in the Revised Guidance under *Step 2A(ii)*, are:

(1)   MPEP § 2106.05(a) Improvements to the Functioning of a Computer or To Any Other Technology or Technical Field

(2)   MPEP § 2106.05(b) Particular Machine

(3)   MPEP § 2106.05(c) Particular Transformation

(4)   MPEP § 2106.05(e) Other Meaningful Limitations

(5)   MPEP § 2106.05(f) Mere Instructions To Apply An Exception

(6)   MPEP § 2106.05(g) Insignificant Extra-Solution Activity

(7)   MPEP § 2106.05(h) Field of Use and Technological Environment

See Revised Guidance 55.

If the recited judicial exception is integrated into a practical application as determined under one or more of the MPEP sections cited above, then the claim is not directed to the judicial exception, and the patent-eligibility inquiry ends. *See* Revised Guidance 54. If not, then analysis proceeds to *Step 2B*.

Step 2B – "Inventive Concept" or "Significantly More"

Under our reviewing courts' precedent, it is possible that a claim that does not "integrate" a recited judicial exception under *Step 2A(ii)* is nonetheless patent eligible. For example, the claim may recite additional

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[9] *See* MPEP §§ 2106.05(a)–(c), (e)–(h). Citations to the MPEP herein refer to revision [R-08.2017]. Sections 2106.05(a), (b), (c), and (e) are indicative of integration into a practical application, while §§ 2106.05(f), (g), and (h) relate to limitations that are not indicative of integration into a practical application.

elements that render the claim patent eligible even though one or more claim elements may recite a judicial exception.[10] The Federal Circuit has held claims eligible at the second step of the *Alice/Mayo* test (USPTO *Step 2B*) because the additional elements recited in the claims provided "significantly more" than the recited judicial exception (e.g., because the additional elements were unconventional in combination).[11] Therefore, if a claim has been determined to be directed to a judicial exception under *Revised Step 2A*, we must also evaluate the additional elements individually and in combination under *Step 2B* to determine whether they provide an inventive concept (i.e., whether the additional elements amount to significantly more than the exception itself).[12]

Under the Revised Guidance, we must consider in *Step 2B* whether an additional element or combination of elements: (1) "Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present;" or (2) "simply appends well-understood, routine, conventional activities previously known to the industry, specified

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[10] *See, e.g.*, *Diehr*, 450 U.S. at 187.

[11] *See, e.g.*, *Amdocs (Israel), Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1304 (Fed. Cir. 2016); *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016); *DDR Holdings v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014).

[12] The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016). In particular, "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present." *See* Revised Guidance, Section III.B.[13]

In the *Step 2B* analysis, an additional element (or combination of elements) is not well-understood, routine or conventional unless the examiner finds an evidentiary basis, and expressly supports a rejection in writing with, one or more of the following:

> 1.   A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
>
> 2.   A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element(s).
>
> 3.   A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
>
> 4.   A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s). . . .

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[13] In accordance with existing *Step 2B* guidance, an Examiner's finding that an additional element (or combination of elements) is well understood, routine, conventional activity must be supported with at least one of the four specific types of evidence required by the USPTO *Berkheimer* Memorandum, as shown above. For more information concerning evaluation of well-understood, routine, conventional activity, *see* MPEP § 2106.05(d), as modified by the USPTO *Berkheimer* Memorandum (USPTO Commissioner for Patents Memorandum dated Apr. 19, 2018, "Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)" (hereinafter "*Berkheimer Memo*").

See Berkheimer Memo 3–4.

If the Examiner or the Board determines under *Step 2B* that the element (or combination of elements) amounts to significantly more than the exception itself, the claim is eligible, thereby concluding the eligibility analysis.

However, if a determination is made that the element and combination of elements do not amount to significantly more than the exception itself, the claim is ineligible under *Step 2B*, and the claim should be rejected for lack of subject matter eligibility.

ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to claims 32, 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments. We highlight and address specific findings and arguments regarding claim 1 for emphasis as follows.

Step 1 – Statutory Category

Claim 32, as a method (process) claim, recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. Therefore, the issue

before us is whether it is directed to a judicial exception without significantly more.

Step 2A(i): Does the Claim Recite a Judicial Exception?

The Examiner determined that claim 32 is directed to "an idea of itself" (Final Act. 4), and further finds "these [claimed] steps describe the concept of determining the metrics for key performance indicators by utilizing predictive models and normalization and updating at least one predictive model of the plurality of predictive models based at least in part on an interaction which are Mathematical Relationships/Formulas, another court-identified abstract idea, as it is relating to a managing relationships of workers for scheduling purposes." Final Act. 7.

We conclude claim 32 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate, *de novo*, whether claim 1 recites an abstract idea based upon the Revised Guidance.

First, we look to the Specification to provide context as to what the claimed invention is directed to. In this case, the Specification discloses that the "invention relates to the general technical area of modeling interactions between various entities, such as a customer and a telephone call center. More specifically, it relates to mechanisms for using the results produced from such modeling to determine which action to take with respect to a particular entity, such as a customer having a particular profile." Spec. 1, ll. 19–23.

Appellant's Abstract describes the invention thusly:

Disclosed are methods and apparatus for optimizing results produced by a predictive model in order to determine

which action to perform out of a plurality of actions. In an operation (a), a plurality of goal metrics are provided for a plurality of possible actions based on a plurality of input conditions. One or more of the goal metrics are produced by one or more predictive models. In an operation (b), the plurality of goal metrics are normalized. In an operation (c), for each possible action a total of each of the normalized goal metrics multiplied by a corresponding predetermined weight is determined. In an operation (d), the totals determined for the plurality of possible actions are compared to thereby determine a highest total. In an operation (e), an action selected from the plurality of possible actions is performed, where the selected action has the highest total. In one implementation, operations (a) through (e) are repeated for a plurality of sets of input conditions, and normalizing the goal metrics for a current set of input conditions is accomplished by assigning a point value for each goal metric of each action, wherein the point value corresponds to the percentage of previously determined corresponding goal metric values that are less valuable than the current goal metric value.

Spec. 31 (Abstract).

In TABLE 1 below, we identify in *italics* the specific claim limitations in claim 1 that we conclude recite an abstract idea. We additionally identify in **bold** the additional (non-abstract) claim limitations that are generic computer components and techniques, and underline limitations representing extra or post-solution activity:

TABLE 1

Independent Claim 32	**Revised Guidance**
A method comprising:	A process (method) is a statutory subject matter class. *See* 35 U.S.C. § 101.
[L1] <u>collecting</u>, from **one or more servers**, <u>context data</u> generated in response to one or more interactions between the one or more servers and one or more client devices, the context data including a plurality of input attributes for a plurality of predictive models stored in a database;	Collecting information, i.e., data gathering, is insignificant extra-solution activity. Revised Guidance 55, n.31; *see also* MPEP § 2106.05(g). A server is a generic computer component.
[L2] *executing*, by **a distributed learning system with one or more processors associated with one or more computer systems**, *the plurality of predictive models* based on the plurality of input attributes collected with the context data *to generate a plurality of performance metrics*,	"Executing . . . a model . . . based on . . . input attributes" is an abstract idea, i.e., an "observation, evaluation, judgment, opinion" which could be performed as a mental process. See Revised Guidance 52. To the extent execution of a model to generate performance metrics involves mathematical operations, a mathematical calculation is an abstract idea. Revised Guidance 52 and n.12 citing *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) (holding that claims to a "series of mathematical calculations based on selected information" are directed to abstract ideas). A distributed learning system with one or more processors

Independent Claim 32	**Revised Guidance**
	associated with one or more computer systems represent conventional computer components.
each respective predictive model of the plurality of predictive models	
[L3] *evaluating a set of one or more key performance indicators against one or more of the plurality of input-attributes and providing a respective metric quantifying the set of one or more key performance indicators according to a predetermined unit associated with the set of one or more key performance indicators*,	Evaluating data i.e., comparing, is an abstract idea, i.e., an "observation, evaluation, judgment, opinion," which could be performed as a mental process. See Revised Guidance 52.
the plurality of predictive models including a first predictive model that provides a first metric quantifying a first key performance indicator according to a first unit of measurement and a second predictive model that provides a second metric quantifying a second key performance indicator according to a second unit of measurement,	
the first key performance indicator representing a goal that is competing with the second key performance indicator, the first unit of measurement representing a different unit of measurement than the second unit of measurement;	
wherein at least one predictive model of the plurality of predictive models	

Independent Claim 32	Revised Guidance
[L4] *evaluates a non-likelihood of acceptance goal against one or more of the plurality of input attributes*;	"Evaluating," i.e., comparing is an abstract idea, i.e., an observation, evaluation, judgment, opinion, which could be performed as a mental process. See Revised Guidance 52.
for each respective possible offer of a plurality of possible offers, [L5] <u>generating</u>, with the **one or more processors associated with the one or more computer systems**, <u>a plurality of normalized metrics</u> based on a normalization of two or more respective metrics in the plurality of performance metrics across a plurality of different units represented in all key performance indicators in the set of one or more key performance indicators and according to feedback collected from prior executions of the plurality of predictive models, a value of a normalized metric for a respective key performance indicator being different from a value of a metric for the respective key performance indicator before normalization,	Generating or transmitting information, e.g., normalized metrics, is insignificant extra-solution activity. Revised Guidance 55, n.31.
wherein determining the plurality of normalized metrics based on the normalization of the two or more respective metrics in the plurality of performance metrics comprises [L6] *assigning a point value for each key performance indicator of each predictive model evaluating input*	Assigning a point value for a key performance indicator, i.e., weighting, is an abstract idea, i.e., an observation, evaluation,

Independent Claim 32	Revised Guidance
attributes associated with the respective possible offer,	judgment, opinion, which could be performed as a mental process. See Revised Guidance 52.
[L7] *wherein the point value corresponds to a percentage of a previously determined corresponding goal metric value that is less valuable than a current goal metric value*, the plurality of normalized metrics including a first normalized version of the first metric and a second normalized version of the second metric; and	Assigning a pointy value corresponding to a percentage of another number is a mathematical calculation, and is an abstract idea. Revised Guidance 52 and n.12 citing *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) (holding that claims to a "series of mathematical calculations based on selected information" are directed to abstract ideas).
[L8] <u>generating</u>, with the **one or more processors associated with the one or more computer systems**, <u>a combined metric</u> <u>quantifying a predicted outcome of generating</u> and	Generating or transmitting information for display is insignificant extra-solution activity. Revised Guidance 55, n.31.
[L9] <u>presenting</u>, to a particular **client device** accessing **a web server**, <u>a web page</u> including the possible offer, in a series of sequentially presented web pages,	"Presenting" information for display, e.g., a web page, is insignificant extra-solution activity. Revised Guidance 55, n.31.
[L10] the combine[d] metric *generated using a total sum of each of the plurality of normalized metrics as weighted by a corresponding predetermined weight*;	"Generating" a metric using a total sum is a mathematical calculation, and is an abstract idea. Revised Guidance 52 and n.12 citing *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) (holding that claims to a "series of mathematical calculations based

Independent Claim 32	Revised Guidance
	on selected information" are directed to abstract ideas).
[L11] *comparing*, with the **one or more processors associated with the one or more computer systems**, *the total sum quantifying each predicted outcome of generating and presenting different respective web pages including different respective possible offers in the plurality of possible offers to select a particular web page with the predicted outcome having the highest total sum*;	Comparing quantities is an abstract idea, i.e., an observation, evaluation, judgment, opinion, which could be performed as a mental process. See Revised Guidance 52.
[L12] <u>generating and presenting</u>, with the **one or more processors associated with the one or more computer systems**, <u>the particular web page</u> in the series of sequentially presented web pages and	Generating and presenting information, e.g., a web page, is insignificant extra-solution activity. Revised Guidance 55, n.31.
[L13] *updating at least one predictive model* of the plurality of predictive models based, at least in part, on an interaction with a user with the particular web page.	Updating a model is an abstract idea, i.e., an observation, evaluation, judgment, opinion, which could be performed as a mental process. See Revised Guidance 52.

Appeal Br. 16 (Claims App.).

Under the broadest reasonable interpretation standard,[14] we conclude

limitations L1 through L13 recite steps that would ordinarily occur when

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[14] During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under this standard, we interpret claim terms using "the broadest reasonable meaning of the

optimizing results produced by a predictive model in order to determine which action to perform out of a plurality of actions. *See* Final Act. 4–7. For example, in this context, "executing . . . predictive models based on the . . . input attributes collected with the context data to generate . . . performance metrics" is an operation that generally occurs when modeling interactions between various entities, such as a customer and a telephone call center, and then using the results produced from such modeling to determine which action to take with respect to a particular entity, e.g., a customer having a particular profile, whether initiated person-to-person, on paper, or using a computer.

We determine that claim 32, overall, recites a mental process that may also be performed by pen and paper. This type of activity, i.e., determining actions to take based upon modeling and analysis of performance metrics, as recited in limitations L1 through L13 of claim 32, for example, and aside from any computer-related aspects, includes longstanding conduct that existed well before the advent of computers and the Internet, and could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").[15]

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words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

[15] Our reviewing court recognizes that "[a]n abstract idea can generally be described at different levels of abstraction." *Apple, Inc. v. Ameranth, Inc.*,

Thus, under *Step 2A(i)*, we generally agree with the Examiner that claim 32 recites an abstract idea, and more particularly, under our Revised Guidance, we conclude claim 32 recites a judicial exception of determining actions to take based upon modeling and analysis of performance metrics, i.e., a mental process, and thus is an abstract idea.

Step 2A(ii): Judicial Exception Integrated into a Practical Application?

If the claims are directed to a judicial exception, as we conclude above, we proceed to the "practical application" *Step 2A(ii)* in which we determine whether the recited judicial exception is integrated into a practical application of that exception 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.

As to the specific limitations, and referring TABLE 1, above, we find limitations L2–L4, L6, L7, L10, L11, and L13 recite abstract ideas, and limitation L1 recites insignificant data gathering. *See* MPEP § 2106.05(g). Data gathering, as performed by the steps or function in Appellant's claims, is a classic example of insignificant extra-solution activity. *See, e.g.*, *In re*

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842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, "impact the patentability analysis." *Id.* at 1241. Further, "[t]he Board's slight revision of its abstract idea analysis does not impact the patentability analysis." *Id*. Moreover, merely combining several abstract ideas does not render the combination any less abstract. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("Adding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract."); *see also FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining the pending claims were directed to a combination of abstract ideas).

Bilski, 545 F.3d 943, 963 (Fed. Cir. 2008) (en banc), *aff'd sub nom*, *Bilski v. Kappos*, 561 U.S. 593 (2010).

We also find limitations L5, L8, L9, and L12 recite insignificant post solution activity. The Supreme Court guides that the "prohibition against patenting abstract ideas 'cannot be circumvented by' . . . adding 'insignificant postsolution activity.'" *Bilski*, 561 U.S. at 610–11 (quoting *Diehr*, 450 U.S. at 191–92). On this record, we are of the view that Appellant's claims do not operate the recited generic computer components in an unconventional manner to achieve an improvement in computer functionality. *See* MPEP § 2106.05(a).

We find each of limitations L1 through L13 of claim 32 either recite abstract ideas, data gathering, or extra-solution activity, as identified in *Step 2A(i)*, *supra*, and none of the limitations integrate the judicial exception of determining actions to take based upon modeling and analysis of performance metrics into a practical application as determined under one or more of the MPEP sections cited above. The claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a tool to perform the abstract idea.

Under analogous circumstances, the Federal Circuit has held that "[t]his is a quintessential 'do it on a computer' patent: it acknowledges that [such] data . . . was previously collected, analyzed, manipulated, and displayed manually, and it simply proposes doing so with a computer. We have held such claims are directed to abstract ideas." *Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019); *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1351 (Fed. Cir.

2016) ("Though lengthy and numerous, the claims do not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology.").

Therefore, the claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a tool to perform the abstract idea. Thus, on this record, Appellant has not shown an improvement or practical application under the guidance of MPEP section 2106.05(a) ("Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field") or section 2106.05(e)("Other Meaningful Limitations"). Nor does Appellant advance any arguments in the Brief(s) that are directed to the *Bilski* machine-or-transformation test, which would only be applicable to the method (process) claims on appeal. *See* MPEP §§ 2106.05(b) (Particular Machine) and 2106.05(c) (Particular Transformation).

Therefore, we conclude the abstract idea is not integrated into a practical application, and thus claim 32 is directed to the judicial exception.

Step 2B – "Inventive Concept" or "Significantly More"

If the claims are directed to a judicial exception, and not integrated into a practical application, as we conclude above, we proceed to the "inventive concept" step. For *Step 2B* we must "look with more specificity at what the claim elements add, in order to determine 'whether they identify an "inventive concept" in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs*, 838 F.3d at 1258.

Because we determine the claims are directed to an abstract idea or
combination of abstract ideas, we analyze the claims under step two of *Alice*
to determine if there are additional limitations that individually, or as an
ordered combination, ensure the claims amount to "significantly more" than
the abstract idea. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S.
at 77–79). As stated in the Revised Guidance, many of the considerations to
determine whether the claims amount to "significantly more" under Step 2
of the *Alice* framework are already considered as part of determining
whether the judicial exception has been integrated into a practical
application. Revised Guidance at 56. Thus, at this point of our analysis, we
determine if the claims add a specific limitation, or combination of
limitations, that is not well-understood, routine, conventional activity in the
field, or simply appends well-understood, routine, conventional activities at
a high level of generality. *Id.*

In applying step two of the *Alice* analysis, our reviewing court guides
we must "determine whether the claims do significantly more than simply
describe [the] abstract method" and thus transform the abstract idea into
patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709,
715 (Fed. Cir. 2014). We look to see whether there are any "additional
features" in the claims that constitute an "inventive concept," thereby
rendering the claims eligible for patenting even if they are directed to an
abstract idea. *Alice*, 573 U.S. at 221. Those "additional features" must be
more than "well-understood, routine, conventional activity." *Mayo*, 566
U.S. at 79.

Limitations referenced in *Alice* that are not enough to qualify as
"significantly more" when recited in a claim with an abstract idea include, as

non-limiting or non-exclusive examples: adding the words "apply it" (or an equivalent) with an abstract idea[16]; mere instructions to implement an abstract idea on a computer[17]; or requiring no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.[18]

With respect to this step of the analysis, Appellant argues, "[t]he claims recite various technical limitations that, when considered individually or in combination, are directed to improvements in distributed, machine-learning systems to optimize the output of predictive models." Appeal Br. 10. Appellant further argues:

> The claim limitations . . . when considered individually or as an ordered combination, clearly involve an inventive concept beyond merely collecting, analyzing, and presenting information. The specific ordered combination of claim limitations involves a distributed learning system that executes a plurality of prediction models, which may be updated based on execution feedback. These limitations involve a specific arrangement to optimize model execution/efficiency of the predictive models to evaluating competing metrics. This specific arrangement is analogous to the installation of a filtering tool at a specific location (i.e., the Internet Service Provider (ISP) server) in *Bascom*. Thus, these claims involve an inventive concept.

Appeal Br. 14.

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[16] *Alice*, 573 U.S. at 221–23.

[17] *Alice*, 573 U.S. at 222–23, *e.g*., simply implementing a mathematical principle on a physical machine, namely a computer.

[18] *Alice*, 573 U.S. at 225 (explaining using a computer to obtain data, adjust account balances, and issue automated instructions involves computer functions that are well-understood, routine, conventional activities).

Appellant also alleges:

> Further, the Examiner's assertion [of patent ineligibility] is incorrect. There are many different ways in which web pages may be presented in sequential order that do not involve "quantifying each predicted outcome of generating and presenting different respective web pages including different respective possible offers in the plurality of possible offers to select a particular web page with the predicted outcome having the highest total sum", as required by claim 32. The claims therefore involve a specific application of a plurality of predictive models, which are executed in a distributed learning environment and updated according to machine-learning techniques. As highlighted above, the recited limitations involve multiple technological benefits. Thus, these limitations involve an inventive concept that "solve a technology-based problem".

Appeal Br. 14–15.

Evaluating representative claim 32 under step 2 of the *Alice* analysis, for the reasons provided below, we conclude it lacks an inventive concept that transforms the abstract idea of determining actions to take based upon modeling and analysis of performance metrics into a patent-eligible application of that abstract idea.

The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader*, 811 F.3d at 1325. In particular, "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact." *Berkheimer*, 881 F.3d at 1368.

As evidence of the conventional nature of the recited "server," "web server," "distributed learning system with one or more processors associated with one or more computer systems," and "client device" in method

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claim 32; and similarly in system claim 40 and non-transitory computer-readable medium claim 48, the Specification discloses:

> FIG. 7 is a block diagram of a general purpose computer system 700 suitable for carrying out the processing in accordance with one embodiment of the present invention. Other computer system architectures and configurations can be used for carrying out the processing of the present invention. Computer system 700, made up of various subsystems described below, includes at least one microprocessor subsystem (also referred to as a central processing unit, or CPU) 702. That is, CPU 702 can be implemented by a single-chip processor or by multiple processors. CPU 702 is a general purpose digital processor which controls the operation of the computer system 700. Using instructions retrieved from memory, the CPU 702 controls the reception and manipulation of input information, and the output and display of information on output devices.

Spec. 18, l. 16 – 19, l. 2. *See also* Spec. 19, l. 3 – 21, l. 19.

As indicated above, Figure 7 of the Drawings discloses conventional components and techniques:
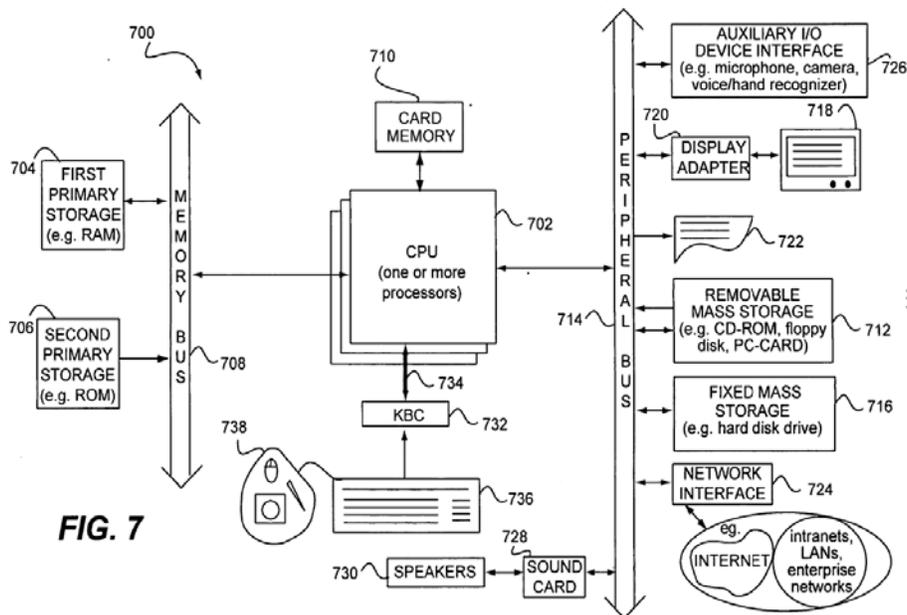
FIG. 7

"FIG. 7 is a block diagram of a general purpose computer system suitable for carrying out the processing in accordance with one embodiment of the present invention." Spec. 6.[19]

Thus, because the Specification and Drawings describe the additional elements in general terms, without describing the particulars, we conclude the claim limitations may be broadly but reasonably construed as reciting conventional computer components and techniques, particularly in light of Appellant's Specification, as quoted above.[20]

The MPEP, based upon our precedential guidance, provides additional considerations with respect to analysis of the well-understood, routine, and conventional nature of the recited computer-related components.

> Another consideration when determining whether a claim recites significantly more than a judicial exception is whether the additional elements amount to more than a recitation of the words "apply it" (or an equivalent) or are more than mere instructions to implement an abstract idea or other exception on a computer. As explained by the Supreme Court, in order to transform a judicial exception into a patent-eligible application, the additional element or combination of elements must do

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[19] An example of the recited "distributed learning system" is illustrated in Figure 3, and is described as "illustrating an exemplary distributed learning system 300 in which techniques of the present invention may be implemented. Of course, the present invention may be implemented in any suitable system that implements predictive modeling." Spec. 8, ll. 18–20. We interpret this statement as indicating that well-understood, routine, and conventional components and techniques may be employed to carry out the functions of the recited distributed learning system.

[20] Claim terms are to be given their broadest reasonable interpretation, as understood by those of ordinary skill in the art and taking into account whatever enlightenment may be had from the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

> "'more than simply stat[e] the [judicial exception] while adding
> the words 'apply it'". *Alice Corp. v. CLS Bank*, 573 U.S. __,
> 134 S. Ct. 2347, 2357, 110 USPQ2d 1976, 1982-83 (2014)
> (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*,
> 566 U.S. 66, 72, 101 USPQ2d 1961, 1965). Thus, for example,
> claims that amount to nothing more than an instruction to apply
> the abstract idea using a generic computer do not render an
> abstract idea eligible. *Alice Corp.*, 134 S. Ct. at 2358, 110
> USPQ2d at 1983. *See also* 134 S. Ct. at 2389, 110 USPQ2d at
> 1984 (warning against a § 101 analysis that turns on "the
> draftsman's art") . . . .
>
> In *Alice Corp.*, the claim recited the concept of
> intermediated settlement as performed by a generic computer.
> The Court found that the recitation of the computer in the claim
> amounted to mere instructions to apply the abstract idea on a
> generic computer. 134 S. Ct. at 2359-60, 110 USPQ2d at 1984.
> The Supreme Court also discussed this concept in an earlier
> case, *Gottschalk v. Benson*, 409 U.S. 63, 70, 175 USPQ 673,
> 676 (1972), where the claim recited a process for converting
> binary-coded decimal (BCD) numerals into pure binary
> numbers. The Court found that the claimed process had no
> substantial practical application except in connection with a
> computer. *Benson*, 409 U.S. at 71-72, 175 USPQ at 676. The
> claim simply stated a judicial exception (e.g., law of nature or
> abstract idea) while effectively adding words that "apply it" in a
> computer. *Id*.

MPEP § 2106.05(f) ("Mere Instructions To Apply An Exception").

With respect to the *Step 2B* analysis, we conclude, similar to *Alice*, the

recitation of a method that includes updating a distributed learning system

based on execution feedback as argued by Appellants (Appeal Br. 14), and

similarly for claims 40 and 48, is simply not enough to transform the patent-

ineligible abstract idea here into a patent-eligible invention under *Step 2B*.

See Alice, 573 U.S. at 221 ("[C]laims, which merely require generic

computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.").

We conclude the claims fail the *Step 2B* analysis because claim 32, in essence, merely recites various computer-based elements along with no more than mere instructions to implement the identified abstract idea using the computer-based elements.

Therefore, in light of the foregoing, we conclude, under the Revised Guidance, that each of Appellant's claims 32, 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58, considered as a whole, is directed to a patent-ineligible abstract idea that is not integrated into a practical application and does not include an inventive concept. Accordingly, we sustain the Examiner's § 101 rejection of independent claim 32, and grouped claims 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58, which fall therewith. *See* Claim Grouping, *supra*.

REPLY BRIEF

To the extent Appellant *may* advance new arguments in the Reply Brief (Reply Br. 1–4) not in response to a shift in the Examiner's position in the Answer, arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellant has not shown.

CONCLUSION

Under our Revised Guidance, governed by relevant case law, claims 32, 35–37, 39, 40, 43–45, 47, 48, 51–53, and 55–58 are patent-ineligible under 35 U.S.C. § 101, and we sustain the rejection.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
32, 35–37, 39, 40, 43–45, 47, 48, 51–53, 55–58	101	Subject Matter Eligibility	32, 35–37, 39, 40, 43–45, 47, 48, 51–53, 55–58	

FINALITY AND RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED