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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* DIANNA SERIO, DARREN TEETS, SUSAN ALLEN,  
FELICE KESSELRING, and MATTHIAS BLUME

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Appeal 2018-005727  
Application 14/169,921  
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

Pursuant to 35 U.S.C. § 134(a), Appellant,<sup>1</sup> CoreLogic Solutions, LLC, appeals from the Examiner's decision rejecting claims 1–6 and 15–20. Appellant has withdrawn claims 7–14 from consideration in response to a restriction requirement. Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> 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 CoreLogic Solutions LLC. Appeal Br. 3.

## STATEMENT OF THE CASE<sup>2</sup>

The claims are directed to a method and system for performing owner association analytics. *See* Spec. (Title). In particular, Appellant’s disclosed embodiments and claimed invention “relate[] to computer processes for performing owner association (‘OA’) analytics for a real estate property.” Spec. ¶ 2.

Claim 1, reproduced below, is representative of the subject matter on appeal (*emphasis* added to contested prior-art limitations):

### *Exemplary Claims*

1. A non-transitory computer readable storage medium comprising instructions which, when executed by a computer system that includes a data processor and is connected to at least one data repository, perform a method comprising:

(a) accessing, by the computer system from the at least one data repository through a communication channel, owner association (OA) data associated with a plurality of real estate properties;

(b) generating, by the data processor of the computer system, an OA amount model based at least in part on the accessed OA data associated with the plurality of real estate properties, wherein the generating comprises:

assigning each property in a geographic area to a group based at least in part on a location of each property;

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<sup>2</sup> Our decision relies upon Appellant’s Appeal Brief (“Appeal Br.,” filed Jan. 30, 2018); Reply Brief (“Reply Br.,” filed May 15, 2018); Examiner’s Answer (“Ans.,” mailed Mar. 15, 2018); Final Office Action (“Final Act.,” mailed Apr. 3, 2017); and the original Specification (“Spec.,” filed Jan. 31, 2014) (claiming benefit of US Application filed 61/892,216, filed Oct. 17, 2013).

*iteratively merging pairs of geospatially adjacent groups based on the characteristics of assigned properties in the geospatially adjacent groups being similar; and*

*iteratively inferring an OA amount for each property in the geographic area by inferring an OA amount for each property in a respective merged pair of geospatially adjacent groups for which OA amount is not known based at least in part on an OA amount for a property in the same group for which the OA amount is known;*

(c) receiving, by the computer system through a network communication channel, identification information associated with a subject property;

(d) determining, by the data processor of the computer system, an estimated OA amount for the subject property by applying the OA amount model to the property; and

(e) storing, by the data processor of the computer system through the communication channel, the estimated OA amount in the at least one data repository.

#### *Prior Art*

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Jost et al. (“Jost”)	US 5,361,201	Nov. 1, 1994
Cagan	US 2006/0085234 A1	Apr. 20, 2006
Brooks	US 2008/0189121 A1	Aug. 7, 2008

#### *Rejections on Appeal*

R1. Claims 1–6 and 15–20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or abstract idea) without significantly more. Final Act. 2.

R2. Claims 1, 3–6, and 15–20 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Jost and Brooks. Final Act. 14.

R3. Claim 2 stands rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Jost, Brooks, and Cagan. Final Act. 37.

### CLAIM GROUPING

Based on Appellant’s arguments (Appeal Br. 5–27) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1–6 and 15–20 on the basis of representative claim 1; and we decide the appeal of obviousness Rejection R2 of claims 1, 3–6, and 15–20 on the basis of representative claim 1.

Remaining claim 2 in Rejection R3, not argued separately, stands or falls with independent claim 1 from which it depends.<sup>3</sup>

### ISSUES AND 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).

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<sup>3</sup> “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).

We disagree with Appellant’s arguments with respect to claims 1–6 and 15–20 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.

1. § 101 Rejection R1 of Claims 1–6 and 15–20

Issue 1

Appellant argues (Appeal Br. 5–19; Reply Br. 2–3) the Examiner’s rejection of claim 1 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 1 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.<sup>4</sup> However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include

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<sup>4</sup> 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.

implicit exceptions: “[l]aws of nature, natural phenomena, and abstract 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

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);<sup>5</sup> 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)).<sup>6</sup>

*See* Revised Guidance 52–53.

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<sup>5</sup> Referred to as “*Revised Step 2A, Prong 1*” in the Revised Guidance (hereinafter “*Step 2A(i)*”).

<sup>6</sup> 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.<sup>7</sup>

*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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<sup>7</sup> 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.<sup>8</sup>

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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<sup>8</sup> 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,<sup>9</sup> 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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<sup>9</sup> *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.<sup>10</sup> 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).<sup>11</sup> 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).<sup>12</sup>

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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<sup>10</sup> See, e.g., *Diehr*, 450 U.S. at 187.

<sup>11</sup> 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).

<sup>12</sup> 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.*<sup>13</sup>

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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<sup>13</sup> 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*

*Step 1 – Statutory Category*

Claim 1, as a non-transitory computer readable storage medium (manufacture) 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 the invention of claim 1 “is directed to the field of ‘performing owner association (OA) analytics for a real estate property.’” Final Act. 5 (citing Spec. ¶¶ 2, 19, 21). “These steps describe [ ] performing mathematical operations to analyze data to estimate a value or quantity, which is similar to concepts identified as abstract ideas by the courts.” Final Act. 6.

We conclude claim 1 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 “[t]he present disclosure relates to computer processes for performing owner association (‘OA’) analytics for a real estate property.” Spec. ¶ 2.

Appellant’s Abstract describes the invention as:

Computer-based processes are disclosed for mining and analyzing owner association (OA) data associated with a plurality of real estate properties and generating an OA amount model that can be used to estimate OA amounts for a subject property. The OA data may also be analyzed to identify OA ratings, OA recommendations, OA delinquency actions, OA contacts information, OA services information, etc. The disclosed processes can also use the generated OA amount model to identify OA amount trends, and determine valuations and investment metrics for real estate properties.

Spec. 50 (Abstract).

Appellant makes several arguments arguing the eligibility of the claims on Appeal.

### *Enfish*

In response to the Examiner’s conclusion that the claims are directed to the abstract idea of “performing mathematical operations to analyze data to estimate a value or quantity,” Appellant generally cites to the Federal Circuit’s holding in *Enfish*<sup>14</sup> for the proposition that the court “cautions

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<sup>14</sup> See *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016).

against ‘over’-abstracting the abstract idea to which the claims are allegedly directed.” Appeal Br. 5. Appellant further argues, “[a]s can be seen, the Examiner considers every portion of independent claim 1 other than the features reciting hardware components or communication over a communication channel to describe the alleged abstract idea of ‘performing mathematical operations to analyze data to estimate a value or quantity.’” Appeal Br. 7.

Based upon our *de novo* review and analysis in TABLE 1, below, we find this “overgeneralizing” argument concerning the Examiner’s rejection is moot.

#### *McRO*

Appellant argues the court’s decision in *McRO*<sup>15</sup> is applicable to the appealed claims (Appeal Br. 10), purportedly because the Examiner overgeneralized the claimed subject matter, and because “the Specification discusses technical improvements afforded by the claimed features.” *Id.* “Like ‘the incorporation of the claimed rules’ in *McRO*, in independent claim 1, it is at least the specific operations of ‘generating . . . an OA amount model,’ ‘not the use of the computer, that “improved [the] existing technological process” by allowing the automation of further tasks.’” Appeal Br. 11. We disagree with Appellant’s argument concerning the relevance of *McRO*.

We disagree because the claims in *McRO* recited a “specific . . . improvement in computer animation” using “unconventional rules that

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<sup>15</sup> *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

relate[d] sub-sequences of phonemes, timings, and morph weight sets.” *McRO*, 837 F.3d at 1302–03, 1307–08, 1314–15. In *McRO*, “the incorporation of the claimed rules, not the use of the computer,” improved an existing technological process. *Id.* at 1314. Appellant does not, however, identify how claim 1 improves an existing technological process. *See Alice*, 573 U.S. at 223 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”).

Rather, Appellant argues the improvement over conventional techniques is embodied in the claims by noting “‘[e]xisting methods, studies, and analytical tools provide aggregation of OA data from multiple sources. However, focusing solely on the aggregated data may not provide an accurate picture of risks associated with OAs’” (Appeal Br. 11 (quoting Spec. ¶ 3)), and by noting “‘[c]omplex statistical models, such as OAMs may be utilized to determine a rating for an OA/property or group of OAs/properties or make OA recommendations based on the large data set that has been collected.’” *Id.* (quoting Spec. ¶ 20). According to Appellant, “this improves the technical field of analytical tools to determine a value of an OA by enabling the computer system to generate ‘an OA amount model’ and determine ‘an estimated OA amount for the subject property by applying the OA amount model to the property,’ in contrast to previous analytical tools that merely aggregated the OA data for a human to then analyze.” *Id.*

We further disagree with Appellant’s arguments because the “mere automation of manual processes using generic computers does not constitute a patentable improvement in computer technology.” *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

In addition, Appellant does not direct us to any *evidence* that the claimed generating step corresponds to unconventional rules or otherwise improves the technical field of analytical tools to determine a value of an OA.

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 1	Revised Guidance
A non-transitory computer readable storage medium comprising instructions which, when executed by a computer system that includes <b>a data processor and is connected to at least one data repository</b> , perform a method comprising:	A storage medium comprising instructions (manufacture) is a statutory subject matter class. <i>See</i> 35 U.S.C. § 101.  A data processor is a generic computer component; a data repository (memory/database) is a generic computer component.
(a) <u>accessing</u> , by the computer system from the at least one <b>data repository</b> through a <b>communication channel</b> , owner association (OA) <u>data</u> associated with a plurality of real estate properties;	Data gathering is merely insignificant extra-solution activity that does not add significantly more to the abstract idea to render the claimed invention patent-eligible. <i>See In re Bilski</i> , 545 F.3d 943, 962 (Fed. Cir. 2008) ( <i>en banc</i> ), <i>aff'd on other grounds</i> , 561 U.S. 593 (2010) (“[T]he involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity”); <i>see also</i> MPEP § 2106.05(g); <i>and see buySAFE, Inc. v.</i>

Independent Claim 1	Revised Guidance
	<p><i>Google, Inc.</i>, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (computer receives and sends information over a network).</p> <p>A communication channel is a generic computer component/technique.</p>
<p>(b) <i>generating</i>, by the data processor of the computer system, <i>an OA amount model</i> based at least in part on the accessed OA data associated with the plurality of real estate properties, wherein the generating comprises:.</p>	<p>“[G]enerating” 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.</p> <p>Alternatively, “generating . . . [a] model,” without explicitly reciting a mathematical formula or relationship, arguably utilizes a mathematical calculation, which is an abstract idea. Revised Guidance 52 and n.12 citing <i>SAP America, Inc. v. InvestPic, LLC</i>, 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).</p>
<p>[(b1)] <i>assigning each property in a geographic area to a group</i> based at least in part on a location of each property;</p>	<p>“[A]ssigning . . . to a group” is an abstract idea, i.e., an observation, evaluation, judgment, opinion” which could be performed as a mental process. See Revised Guidance 52.</p>
<p>[(b2)] <i>iteratively merging pairs of geospatially adjacent groups based on the characteristics of assigned properties in the geospatially adjacent groups being similar; and</i></p>	<p>“[M]erging pairs of . . . groups . . . based on the characteristics of assigned properties in . . . adjacent groups being similar” is an abstract idea, i.e., an observation, evaluation, judgment, opinion” which could be performed as a mental process. See Revised Guidance 52.</p>

Independent Claim 1	Revised Guidance
<p>[(b3)] <i>iteratively inferring an OA amount for each property in the geographic area by inferring an OA amount for each property in a respective merged pair of geospatially adjacent groups</i> for which OA amount is not known based at least in part on an OA amount for a property in the same group for which the OA amount is known;</p>	<p>“[I]nfering an OA amount for each property in the geographic area by inferring an OA amount for each property in a . . . merged pair of . . . adjacent groups” is an abstract idea, i.e., an observation, evaluation, judgment, opinion” which could be performed as a mental process. See Revised Guidance 52.</p>
<p>(c) <u>receiving</u>, by the computer system through a <b>network communication channel</b>, <u>identification information</u> associated with a subject property;</p>	<p>“[R]eceiving . . . identification information,” i.e., data gathering, is merely insignificant extra-solution activity that does not add significantly more to the abstract idea to render the claimed invention patent-eligible. Revised Guidance 55, n.31; <i>see In re Bilski</i>, 545 F.3d 943, 962 (Fed. Cir. 2008) (<i>en banc</i>), <i>aff’d on other grounds</i>, 561 U.S. 593 (2010) (“[T]he involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity”)</p> <p>A network communication channel is a generic computer component/technique.</p>
<p>(d) <i>determining</i>, by the data processor of the computer system, <i>an estimated OA amount for the subject property by applying the OA amount model to the property</i>; and</p>	<p>“[D]etermining . . . an estimated . . . amount . . . by applying the . . . model” is an abstract idea, i.e., an observation, evaluation, judgment, opinion” which could be performed as a mental process. See Revised Guidance 52.</p>
<p>(e) <u>storing</u>, by the data processor of the computer</p>	<p>Storing the estimated OA amount (data) in a data repository is a generic computer</p>

Independent Claim 1	Revised Guidance
system through the communication channel, <u>the estimated OA amount in the at least one data repository.</u>	function, or may alternatively be viewed as mere extra-solution activity.

Spec. 29 (Claims App.).

Under the broadest reasonable interpretation standard,<sup>16</sup> we conclude limitations (a) through (e) recite steps that would ordinarily occur when performing analytics for a real estate property to analyze data to estimate a value. *See* Final Act. 3–10. For example, accessing data associated with real estate properties is an operation that would generally occur first in any analysis. Further, assigning properties in a geographic area to a group, and merging groups based on the similarity of characteristics of assigned properties in adjacent groups are operations that would ordinarily occur when estimating an Owners Association amount for a property, whether initiated person-to-person, on paper, or using a computer.

We determine that claim 1, overall, recites a mental process that may also be performed by pen and paper. This type of activity, i.e., performing analytics for a real estate property to analyze data to estimate a value, as

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<sup>16</sup> 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 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).

recited in limitations (a) through (e), 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*.”).<sup>17</sup>

Thus, under *Step 2A(i)*, we agree with the Examiner that claim 1’s method for estimating an Owners Association value is an abstract idea. We conclude claim 1, under our Revised Guidance, recites a judicial exception of receiving and analyzing data to estimate a value, 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

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<sup>17</sup> Our reviewing court recognizes that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 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).

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.

With respect to this step of the analysis, Appellant argues:

In the present case, the Appellant submits that the features of independent claims 1 and 15 improve another technology or technical field, include features that are not “well-known, routine and conventional,” and include unconventional features that confine the claims to a particular useful application.

Regarding an improvement to another technology or technical field, as discussed above, the claim operations improve the technical field of analytical tools to determine a value of an OA by enabling the computer system to generate “an OA amount model” and determine “an estimated OA amount for the subject property by applying the OA amount model to the property,” in contrast to previous analytical tools that merely aggregated the OA data for a human to then analyze.

Appeal Br. 14.

As to the specific limitations, we find limitations (a) (“accessing . . . data”) and (c) (“receiving . . . information”) recite insignificant data gathering. *See* MPEP § 2106.05(g). Data gathering, as performed by the steps or functions in Appellant’s claims, is a classic example of insignificant extra-solution activity. *See, e.g., In re 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 limitation (e) (“storing . . . the estimated OA amount”) recites 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, i.e., data processor, data repository, and communications channel in an unconventional manner to achieve an improvement in computer functionality. *See* MPEP § 2106.05(a).

We find each of limitations (b) through (b3) and (d) of claim 1 recites abstract ideas as identified in *Step 2A(i)*, *supra*, and, contrary to Appellant’s contentions, none of the limitations integrate the judicial exception of performing analytics for a real estate property to analyze data to estimate a value 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”).

Therefore, we conclude the abstract idea is not integrated into a practical application, and thus the claim 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.

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. *Ultramarical, 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<sup>18</sup>; mere instructions to implement an abstract idea on a computer<sup>19</sup>; 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.<sup>20</sup>

With respect to this step of the analysis, Appellant argues the claims “recite additional features that amount to significantly more than the alleged abstract idea pursuant to Part II of the test set forth in *Alice*.” Appeal Br. 12. Appellant further contends, “the combination of the features of independent claim 1 is novel and non-obvious. As would be appreciated, if the features of independent claim 1 are novel and non-obvious, then they necessarily include features that are not ‘well-known, routine and conventional.’” Appeal Br. 14. Appellant further contends:

In this case, because the prior art does not disclose or suggest the . . . features of independent claim 1, these claims satisfy the 35 U.S.C. § 102 and 35 U.S.C. § 103 standards of anticipation and obviousness. It should therefore be recognized that the claims also satisfy the lesser “well-understood, routine

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<sup>18</sup> *Alice*, 573 U.S. at 221–23.

<sup>19</sup> *Alice*, 573 U.S. at 222–23, *e.g.*, simply implementing a mathematical principle on a physical machine, namely a computer.

<sup>20</sup> *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).

and conventional” requirement set forth in *Alice* pursuant to Section 1.B.1 of the Interim Eligibility Guidance.

Appeal Br. 15.

In response, we disagree and note, as the Supreme Court emphasizes, “[t]he ‘novelty’ of any element or steps in a process, or even of the process itself, is of **no relevance** in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diehr*, 450 U.S. at 188–89 (emphasis added). Our reviewing court further guides that “[e]ligibility and novelty are separate inquiries.” *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017); *see also Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016) (holding that “[e]ven assuming” that a particular claimed feature was novel does not “avoid the problem of abstractness”).

Appellant next quotes the limitations of claim 1 (Appeal Br. 15–16) and asserts they “are not ‘well-understood, routine and conventional’ operations in the field of analytical tools to determine a value of an OA,” “[n]or, as is apparent, are they ‘well-understood, routine and conventional’ operations ‘to analyze data to estimate a value or quantity,’ as the Examiner alleged.” Appeal Br. 16.

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we conclude, as discussed below, it lacks an inventive concept that transforms the abstract idea of performing analytics for a real estate property to analyze data to estimate a value 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 method carried out by instructions stored in the computer readable storage medium of claim 1, the Specification discloses “[t]he present disclosure relates to computer processes for performing owner association (‘OA’) analytics for a real estate property.” Spec. ¶ 2. The Abstract further describes the invention:

Computer-based processes are disclosed for mining and analyzing owner association (OA) data associated with a plurality of real estate properties and generating an OA amount model that can be used to estimate OA amounts for a subject property. The OA data may also be analyzed to identify OA ratings, OA recommendations, OA delinquency actions, OA contacts information, OA services information, etc. The disclosed processes can also use the generated OA amount model to identify OA amount trends, and determine valuations and investment metrics for real estate properties.

Spec. 50 (Abstract).

As for particular recited elements, i.e., “data processor,” “data repository,” “communication channel,” “computer system,” and “network communication channel,” along with the step of “generating . . . a model,” we find the Specification describes these additional elements in general terms, without describing the particulars. *See, e.g.*, Spec. ¶ 22 (“As illustrated, the system includes a set of analytics applications 22 that are

accessible over a network 24 (such as the Internet) via a computing device 26 (desktop computers, mobile phones, servers, etc.); Spec. ¶ 23 (“these data repositories 30-34 include a database of property data 30, and database of OA data 32, and any other online data resources 34. Although depicted as separate databases, some of these data collections may be merged into a single database or distributed across multiple distinct databases.”); Spec. ¶ 27 (“As further shown in FIG. 1, the system 20 may also include one or more interfaces 40 to other (externally hosted) services and databases. For example, the system may include APIs or other interfaces for retrieving data from LexisNexis, Merlin, MERS, particular real estate companies, government agencies, and other types of entities.”); Spec. ¶ 47 (“As depicted in FIG. 3, generating an OA estimation model includes selecting modeling method(s)/technique(s) (block 310). Example modeling techniques may include but are not limited to linear regression, logistic regression, neural networks, support vector machines, decision trees, and their derivatives. Suitable modeling methods may include machine learning/data mining techniques including linear regression, logistic regression, neural networks, support vector machine, decision tree, etc. A further modeling technique is a comparables model where the rules and weights for computing an estimate based on a set of comparable OAs can be chosen by a human expert.”).

Thus, we conclude the claim limitations may be broadly but reasonably construed as reciting conventional computer components and

techniques, particularly in light of Appellants' Specification, as quoted above.<sup>21</sup>

### *Preemption*

Appellant also alleges the claims are patent-eligible because of “unconventional features that confine the claims to a particular useful application,” and thus, we infer Appellant argues that the practice of the claimed invention does not preempt practice by others. Appeal Br. 16; *and see* Appeal Br. 17. Regarding preemption, “[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility. . . . Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) (“that the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract”).

### *Bascom*

Appellant further argues the Federal Circuit’s holding in *Bascom*<sup>22</sup> supports Appellant’s contention that the claims on Appeal support a finding

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<sup>21</sup> 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).

<sup>22</sup> *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016).

that the claims recite “significantly more” under Step 2 of *Alice*. Appeal Br. 16. We disagree.

We disagree because, in *Bascom*, the claims were directed to the inventive concept of providing customizable Internet-content filtering which, under Step 2 of the *Alice* analysis, was found to transform the abstract idea of filtering content into a patent-eligible invention. Although the underlying idea of filtering Internet content was deemed to be abstract, under step 2 of the *Alice* analysis, the claims carved out a specific location for the filtering system, namely a remote Internet service provider (ISP) server, and required the filtering system to give users the ability to customize filtering for their individual network accounts. *Bascom*, 827 F.3d at 1349.

Furthermore, there is no evidence of record to substantiate Appellant’s assertion that the claims recite non-conventional and non-generic arrangement of known, conventional elements, as in *Bascom*. Moreover, we find no analogy between Appellant’s claimed method of performing analytics for a real estate property to analyze data to estimate a value, and the Internet content filtering claims in *Bascom*.

#### *DDR*

Appellant further urges “the *Bascom* claims are analogous to those involved in *DDR Holdings*<sup>23</sup>, and represent an improvement to the performance of the computer system itself” (Appeal Br. 17 (generally citing *Bascom*)), and “the present claims are analogous to the *DDR* claims for reasons similar to those stated in *Bascom*.” *Id.*

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<sup>23</sup> *DDR Holdings v. Hotels.com*, 773 F.3d 1245 (Fed. Cir. 2014)

We find Appellant’s reliance on *DDR* (*id.*) is misplaced as the recited claims do not improve the computer. In *DDR*, the claims at issue involved, *inter alia*, “web pages displays [with] at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants” (claim 1 of US 7,818,399). The Federal Circuit found the claims in *DDR* to be patent-eligible under step one of the *Alice* test because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *DDR Holdings*, 773 F.3d at 1257. Specifically, the Federal Circuit found the claims addressed the “challenge of retaining control over the attention of the customer in the context of the Internet.” *Id.* at 1258. We find the rejected claims are dissimilar to *DDR*’s web page with an active link, and the Specification does not support the view that the computer related claim elements are unconventional. *See Spec.* ¶¶ 22, 23, 27, and 47.

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 “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 a “data processor,” “data repository,” “communication channel,” “computer system,” and “network communication channel,” as argued by Appellants, and similarly for independent claim 15, 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.”).

Therefore, in light of the foregoing, we conclude, under the Revised Guidance, that each of Appellant's claims 1–6 and 15–20, 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 1, and grouped claims 2–6 and 15–20 which fall therewith. *See Claim Grouping, supra.*

2. § 103 Rejection R2 of Claims 1, 3–6, and 15–20

Issue 2

Appellant argues (Appeal Br. 19–27) the Examiner's rejection of claim 1 under 35 U.S.C. § 103 as being obvious over the combination of Jost and Brooks is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests “[a] non-transitory computer readable storage medium comprising instructions which, when executed by a computer system that includes a data processor and is connected to at least one data repository, perform a method” that includes, *inter alia*, the steps of

(b) generating . . . an OA amount model . . . wherein the generating comprises . . .

[(b1)] iteratively merging pairs of geospatially adjacent groups based on the characteristics of assigned properties in the geospatially adjacent groups being similar; and

[(b2)] iteratively inferring an OA amount for each property in the geographic area by inferring an OA amount for each property in a respective merged pair of geospatially adjacent groups for which OA amount is not known based at

least in part on an OA amount for a property in the same group for which the OA amount is known[,] as recited in claim 1?

Principles of Law

“[O]ne cannot show non-obviousness by attacking references individually where . . . the rejections are based on combinations of references.” *In re Keller*, 642 F.2d 413, 426 (CCPA 1981). “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference . . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *Id.* at 425.

Further, the relevant inquiry is whether the Examiner has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR*, 550 U.S. at 418).

Moreover, 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 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).

Analysis

*Limitation (b1) — “iteratively merging”*

The Examiner finds Jost teaches or suggests the contested “iteratively merging” limitation, i.e.,

Referring now to FIG. 17, there is shown an example of geographic subdivision according to the present invention. Each region 1701 is divided into successively smaller geographic areas. In the example shown, the geographic areas are ZIP codes 1702, census tracts 1703, map coordinates 1704, and assessor parcel number (APN) groups 1705. Other geographic areas, such as census blocks, or lot blocks, may also be used. Referring now also to FIG. 18, there is shown a flowchart of the aggregation (i.e., merging) method. System 100 uses data describing real estate sales activity for each month of a user-specified training period, such as eighteen months. For each month within the training period, system 100 performs the steps shown in FIG. 18. System 100 initially defines 1804 the “neighborhood” as the smallest geographical area, such as the APN group 1705. If there have been any sales in the previous 12 months 1805, system 100 proceeds to step 1813. If not, it defines 1806 the neighborhood as the next larger geographic area, the map code 1704. (i.e., iteratively merging geospatially adjacent groups).

Final Act. 16–17 (citing Jost Figs. 17, 18; col. 8, ll. 32–52).

Appellant contends “Jost does not disclose or suggest ‘iteratively merging pairs of geospatially adjacent groups based on the characteristics of assigned properties in the geospatially adjacent groups being similar,’ as recited in independent claim 1.” Appeal Br. 21. The Examiner allegedly erred because “[t]he Examiner is interpreting ‘the repeated aggregation of successively larger geographic areas in Jost’ as disclosing ‘iteratively merging pairs of geospatially adjacent groups.’” *Id.*

The Examiner responds to Appellant's argument by finding:

The Appellant's assertions are not persuasive because they do not specifically articulate a patentable distinction between the cited portions of any of Jost, Brooks . . . and the limitations for which it has been cited. In other words, Appellant's brief at most points out differences between the claims and the cited references, but does not show or explain why one of skill in the art would not have understood the references as teaching the claimed features, particularly in light of the combination of references and the principles from the MPEP summarized above.

Ans. 23.

The Examiner specifically determined:

Jost teaches that various types of geographic areas may be used as a basis for analysis and these areas are successively merged into larger, contiguous areas (Final Action, p17). The aggregation process in Jost is based on predictor variables that preserve information describing neighborhood characteristics. (Final Action, p17). In other words, one of skill in the art would have understood that for Jost's predictor variables to "preserve information describing neighborhood characteristics" (Jost, c8:19–24), those characteristics would have to be similar among adjacent geographic areas or neighborhoods. To explain why Jost may be relied upon as reasonably suggesting this teaching to one of skill in the art, the Examiner points out that Jost trains the "data set into area characteristics in a flexible manner, using the smallest geographic areas containing sufficient data to produce reliable models . . . able to capture area characteristics for relatively small geographic areas where the data describing these characteristics are available." (Jost, c8:25–31). In other words, even upon aggregation, the neighborhood characteristics of the aggregated areas remain based on the ability of the predictor variable to provide a reliable impression of the sub-areas in the aggregated area. In other words, the characteristics of the sub areas corresponding

to those predictor variables must be similar for them to provide a reliable impress or model.

Ans. 24.

Under the broadest reasonable interpretation, we agree with the Examiner's finding that Jost teaches or suggests the disputed "iteratively merging" limitation of claim 1. We agree with the Examiner because "the condition on which aggregation might continue or discontinue (e.g., number of sales) is distinguishable from the condition that determines whether two adjacent areas might be considered for aggregation (e.g., similar property characteristics). As such, Appellant has merely pointed out a possible parallel feature in Jost that does not replace or nullify the features in Jost on which the rejection is based." Ans. 25.

*Limitation (b2) — "iteratively inferring"*

The Examiner finds Jost teaches or suggests the contested "iteratively inferring" limitation, i.e.,

Neural networks learn from examples by modifying their weights. The "training" process, the general techniques of which are well known in the art, involves the following steps: (1) Repeatedly (i.e., iteratively) presenting examples of a particular input/output task to the neural network model; (2) Comparing the model output and desired output to measure error; and (3) Modifying model weights to reduce the error. This set of steps is repeated until further iteration fails to decrease the error. Then, the network is said to be "trained." Once training is completed, the network can predict outcomes for new data inputs. If there have been at least 3 sales (i.e., at least 3 properties in the group for which the sale amount/property value is known) in the previous 12 months 1807, system 100 proceeds to step 1813. System 100 continues to enlarge the definition of the neighborhood (i.e., merge pairs of geospatially adjacent groups for which the number of sales is

insufficient, i.e., an amount is not known) until a predetermined minimum number of sales have occurred within a predetermined period of time (i.e., a predetermined minimum number of sales within the area and timeframe for which a property amount is known). The minimum number of sales and the period of time in steps 1805, 1807, 1809, and 1811 may vary according to the optimal sample size and geographic specificity required. In addition, the number and size of the geographic areas may vary. Once the predetermined minimum number of sales for a particular geographic area has been met, system 100 determines 1813 medians, averages, and variances for various property characteristics such as sales price (i.e., an amount for each property), square feet, number of bedrooms, etc. (i.e., inferring an amount for each property in the geographic area by estimating medians, averages, and variances for various property characteristics).

Final Act. 17–18 (citing Jost col. 7, ll. 24–36, col. 8, ll. 52–66).

Appellant primarily argues against the Examiner’s statements in the Advisory Action mailed June 16, 2017 which mentioned the Cagan reference. Appeal Br. 23–25.<sup>24</sup> Appellant generally acknowledges the Examiner’s rejection as articulated in the Final Action by alleging that neither Jost nor Cagan teaches or suggests the disputed “iteratively

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<sup>24</sup> The Examiner responds by stating,

Instead of discussing the cited portions of Brooks or analyzing the combination of Jost in view of Brooks, such as discussing the rationale supporting the combination of Jost in view of Brooks, Appellant focuses on an argument by the Examiner in the Advisory Action mailed June 16, 2017, in which Cagan was referenced. (App. Br. p23). Appellant overstates the reference to Cagan in the Advisory Action, implying that it is a new grounds of rejection, and then discusses a combination of Jost and Cagan over the following page that fails to address the combination of Jost in view of Brooks.

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inferring” limitation. Appeal Br. 24. In particular, Appellant contends Jost “operates on known sales prices. There is simply no suggestion in Jost of inferring a sales price that is not known based on parameters or values of properties that are known”, as alleged by the Examiner. *Id.* (internal quotation marks omitted).

We disagree with Appellant’s arguments, and adopt as our own the Examiner’s factual findings as articulated at pages 17 and 18 of the Final Action, quoted above. We further adopt as our own and incorporate herein the Examiner’s findings in the Final Action at pages 27 through 31 which further explain the rejection.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner’s reliance on the cited prior art combination to teach or suggest the disputed limitations of claim 1, nor do we find error in the Examiner’s resulting legal conclusion of obviousness.

Accordingly, we sustain the Examiner’s obviousness rejection of independent claim 1, and grouped claims 3–6 and 15–20, which fall therewith. *See* Claim Grouping, *supra*.

3. Rejection R3 of Claim 2

In view of the lack of any substantive or separate arguments directed to obviousness Rejection R3 of claim 2 under § 103 (*see* Appeal Br. 27), we sustain the Examiner’s rejection of these claims. Arguments not made are waived.<sup>25</sup>

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<sup>25</sup> Appellant merely argues, “the dependent claims are allowable at least by virtue of their dependency on the above-identified independent claims.” Appeal Br. 27.

## 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.

## CONCLUSIONS

(1) Under our Revised Guidance, governed by relevant case law, claims 1–6 and 15–20 are patent-ineligible under 35 U.S.C. § 101, and we sustain the rejection.

(2) The Examiner did not err with respect to obviousness Rejections R1 and R2 of claims 1–6 and 15–20 under 35 U.S.C. § 103 over the cited prior art combinations of record, and we sustain the rejections.

## DECISION SUMMARY

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis / References</b>	<b>Affirmed</b>	<b>Reversed</b>
1–6, 15–20	101	Subject Matter Eligibility	1–6, 15–20	
1, 3–6, 15–20	103	Obviousness Jost, Brooks	1, 3–6, 15–20	
2	103	Obviousness Jost, Brooks, Cagan	2	
<b>Overall Outcome</b>			1–6, 15–20	

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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