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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 STEPHEN L. SCHULTZ and YANDONG WANG
_____

Appeal 2018-009121
Application 13/689,006
Technology Center 2600
_____

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

DIRBA, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellants[2] seek our review under 35 U.S.C. § 134(a) of the

Examiner's rejection of claims 1–10 and 12–20, which are all claims

pending in the application. Although Appellants appeal from a non-final

_____

[1] This Decision uses the following abbreviations: "Spec." for the original specification, filed November 29, 2012, claiming the benefit of U.S. provisional patent application 61/564,699; "Non-Final Act." for the Non-Final Office Action, mailed June 22, 2017; "App. Br." for Appellants' Appeal Brief, filed March 27, 2018; "Ans." for Examiner's Answer, mailed July 24, 2018; and "Reply Br." for Appellants' Reply Brief, filed September 24, 2018.

[2] According to Appellants, the real party in interest is Pictometry International Corp., which Appellants submit is a subsidiary of EagleView Technology Corporation. App. Br. 1.

rejection, we have jurisdiction pursuant to 35 U.S.C. §§ 6(b) and 134(a)

because the claims have been twice presented and rejected. *See Ex parte*

Lemoine, 46 USPQ2d 1420, 1423 (BPAI 1994) (precedential).

We reverse and enter a new ground of rejection of claims 1–10

and 12–20 under 37 C.F.R. § 41.50(b).

BACKGROUND

Appellants' disclosed embodiments and claimed invention relate to a

system for detecting a structure's footprint from oblique imagery (i.e.,

images captured with a camera aimed at an angle that captures both the top

and sides of one or more structures). Spec. ¶¶ 2–10.

Claims 1 and 16, reproduced below, are illustrative of the claimed

subject matter:

1.   A computer system, comprising:

at least one processor; and

one or more computer readable medium storing a set of
instructions that when executed by the at least one processor
causes the at least one processor to perform the following steps:

> receive one or more electronic files of geo-referenced
> oblique images into one or more memory;

> analyze the geo-referenced oblique images to:

>> identify a structure having at least four walls and a
>> base within the one or more electronic files, the
>> walls having vertical edges;

>> determine ground locations for the walls of the
>> structure;

>> determine locations and orientations of the vertical
>> edges of the walls of the structure;

>> determine relative lengths of the walls of the
>> structure utilizing the locations and orientations of
>> edges of the walls of the structure to produce a

series of horizontal line segments representing the base of the walls of the structure, the horizontal line segments having a relative length and an orientation, at least one of the horizontal line segments being determined from at least one horizontal edge extending a length between the vertical edges, the vertical edges having a top and a bottom, and the at least one horizontal edge being above the bottoms of the vertical edges such that the horizontal edge is above the base of the structure; and

assemble the horizontal line segments based on their relative lengths and orientations to form a footprint of the structure.

App. Br. 41–42 (Claims App'x).

16.   A method, comprising the step of:

making a set of instructions on a computer readable medium accessible to a processor of a computer system, the set of instructions including instructions for:

identifying horizontal edges and vertical edges of one or more walls of a structure by analyzing one or more electronic file stored in one or more non-transitory memory, the electronic file being indicative of at least one geo-referenced oblique image;

determining three-dimensional information of the horizontal edges and the vertical edges including position, orientation and relative lengths of the horizontal edges and the vertical edges using geo-referenced oblique images showing all the walls of the structure including one image from each cardinal direction;

determining a ground location for each wall of the structure;

comparing the location and orientation of one or more of the horizontal edges with the ground locations for the walls of the structure;

determining the location of one or more of the horizontal edges as being above the ground locations for the walls of the structure;

> creating, automatically, horizontal line segments between the vertical edges at one or more of the ground locations for the walls of the structure, at least one of the horizontal line segments based on at least one horizontal edge above the ground location for the wall represented by the horizontal line segment; and

> forming a footprint of the structure using at least the created horizontal line segments.

Id. at 45–46.

THE REJECTIONS

R1. Claims 1–10, 12–14, and 16–20 stand rejected under pre-AIA 35 U.S.C. § 103(a) as obvious Zakhor (US 2009/0110267 A1, published April 30, 2009), Trinh (Hoang-Hon Trinh and Kang-Huyn Jo, *Line Segment-Based Facial Appearance Analysis for Building Image*, INTERNATIONAL FORUM ON STRATEGIC TECHNOLOGY, October 20, 2006, at 332–35), Kim (US 2008/0208547 A1, published August 28, 2008), and Guo (US 2011/0075882 A1, published March 31, 2011). Non-Final Act. 7–20.

R2. Claim 15 stands rejected under pre-AIA 35 U.S.C. § 103(a) as obvious over Zakhor, Trinh, Kim, Guo, and Brown (US 2015/0213590 A1, filed July 29, 2011, published July 30, 2015). Non-Final Act. 20.

ANALYSIS

We review the appealed rejections for error based upon the issues identified by Appellants and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). To the extent Appellants have 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 have considered all of Appellants' arguments and any evidence presented. Based upon our review of the record, we find a preponderance of the evidence supports Appellants' arguments for the specific reasons discussed below. We highlight and address specific findings and particular arguments for emphasis in our analysis below.

Obviousness Rejection R1 of Claims 1–10, 12–14, and 16–20

Appellants argue claims 1–10 and 12–14 together as a group (*see* App. Br. 29–39) and argue claims 16–20 together as a group (*see id.* at 19–28). Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv), we limit our discussion to independent claims 1 and 16. Dependent claims 2–10 and 12–14 stand or fall with claim 1; independent claims 17–19 and dependent claim 20 stand or fall with claim 16.

Claim 1

Claim 1 recites: "analyze the geo-referenced oblique images to: . . . [1] determine ground locations for the walls of the structure; [2] determine locations and orientations of the vertical edges of the walls of the structure; [3] determine relative lengths of the walls of the structure utilizing the locations and orientations of edges of the walls of the structure . . . ." App. Br. 41 (Claims App'x) (numbering added) (collectively the "disputed limitations").

For the disputed limitations, the Examiner points to Zakhor, Trinh, and Kim. Non-Final Act. 8–9. Specifically, the Examiner finds that Zakhor analyzes features in an aerial image and a 3D model to identify potential

matches between 2D orthogonal corners[3] in the aerial image and those in the 3D model. *Id.* at 8 (citing Zakhor ¶¶ 6, 23, 28); *see id.* at 7 (finding Zakhor's aerial image teaches the claimed "geo-referenced oblique image"). The Examiner also finds Zakhor teaches detection and use of a "vanishing point." *Id.* at 8 (citing Zakhor, ¶¶ 26, 27, 33). The Examiner states that "Trinh and Kim supplement vanishing points by . . . using geometric information of extended lines of the detected edges for feature detection." *Id.* Further, the Examiner finds Trinh discloses "line segments with a relative length and an orientation" (*id.* at 8–9 (citing Trinh, Fig. 2)), and the Examiner finds Kim teaches an edge detection unit, which can detect "extended straight lines of the edges [that are] perpendicular to the ground of the 2D photographic image" (*id.* at 9 (quoting Kim ¶ 41)). The Examiner further explains:

> analyzing the aerial images and 3D model to extract features (including rooftop and façade of buildings) of the aerial image & feature determination (i.e. 2DOC) [as disclosed in Zakhor] refers to "identify a structure, determine ground locations for walls of the structure, determine locations and orientations of the vertical edges of the walls of the structure, and determine relative lengths of the walls of the structure" [as required by claim 1].

Id. at 3–4 (responding to Appellants' prior arguments).

Appellants allege that the references fail to teach or suggest the disputed limitations. App. Br. 31–34. Appellants assert that Zakhor teaches "the extraction of 2D corners of structures to determine feature pairs and the determination of vanishing points, all to recover camera pose." *Id.* at 33.

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[3] The 2D orthogonal corners (also called "2DOC") "correspond to orthogonal structural corners where two orthogonal building contour lines intersect." Zakhor ¶ 23.

Moreover, Appellants agree that Zakhor matches corners from a 3D model
to corners in an aerial image (*id.* at 32); however, Appellants argue this fails
to teach or suggest analyzing an aerial image to determine the claimed
ground locations for the walls, the claimed locations and orientations of the
vertical edges of the walls, and the claimed relative lengths of the walls, as
specifically required by the claim. App. Br. 32–33. Further, Appellants
further argue that Trinh and Kim to not cure the deficiencies of Zakhor
because "[s]imply detecting edges or objects does not teach or suggest" the
limitations specifically recited by the claim. *Id.* at 33.

The Examiner does not directly respond to these arguments, but rather
references the discussion of related limitations of claim 16. Ans. 8–9; *see id.*
at 5–8 (referenced discussion). In the referenced discussion, the Examiner
notes that Zakhor defines ground-level altitude, extracts the outer contour of
a region, and identifies GPS and compass measurement associated with an
image. Ans. 6 (citing Zakhor ¶¶ 22, 38).[4] The Examiner then states, "Based
on the defined ground-level and latitude/longitude in geo-references image,
the ground locations of the walls of the structure can be determined." *Id.*
The Examiner explains:

> It is common sense to . . . [a person with] skill in the art that
> any dimension of the building geometries, for example, length,
> width or height of the wall of building, can be determined in a
> 2D image from a field of view of a 3D building model . . . . The
> argued limitations are barely necessary operations for feature
> extraction.

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[4] Rather than responding directly to Appellants' arguments, this portion of
the Answer largely repeats the findings of the Non-Final Office Action.
Compare Non-Final Act. 17–18 *with* Ans. 6–8 (repeating Non-Final Office
Action, with brief additional description of Trinh and picture from Kim).

Id. at 5. The Examiner finds the references, in combination, "teach well-known the extraction of building geometries (e.g., height) from the photographic images and 3D model of building." *Id.* at 8.

Appellants reply that the "Answer does not provide any reason for why the Examiner believes the limitations are 'common sense' or necessary." Reply. Br. 4. Appellants submit that Zakhor uses LIDAR data to create its 3D model, from which Zakhor extracts edges. *Id.* at 5 (citing Zakhor ¶ 38). Appellants submit that the other disclosure of Zakhor relates to estimating camera pose. *Id.* at 7; *see* App. Br. 32 (noting that, in paragraph 22, Zakhor uses GPS coordinates, focal length, and detected vanishing points to estimate the camera pose). Further, Appellants argue the "Answer fails to explain why general extraction of building geometries using images plus 3D models discloses the particular method described in the pending claims." Reply Br. 6.

We are persuaded of Examiner error because the Examiner did not sufficiently explain how the disputed limitations are rendered obvious by the cited references. In particular, the Examiner makes findings regarding the references,[5] without tying those findings to the specific requirements of the disputed limitations, and then concludes that "[i]t would have been obvious . . . to combine the invention of Zakhor with the teaching of Trinh and Kim

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[5] We note that some of the Examiner's factual findings appear to conflate Zakhor's aerial image with Zakhor's 3D model. For example, the Examiner finds that Zakhor teaches "analyzing the aerial images and 3D model to extract features (including rooftop and façade of buildings) of the aerial image" (Non-Final Act. 3); however, the Examiner cites (and we perceive) no passage of Zakhor that actually teaches extracting a rooftop, façade, or the like from an aerial image. Rather, Zakhor notes in passing that aerial images "can cover both rooftop and the façade of buildings" (Zakhor ¶ 18), and Zakhor extracts building geometries from its 3D model (*id.* ¶ 38).

so as to detect or identify *any point, edge or façade features of the building* in the image from the street-based images." Non-Final Act. 10 (emphasis added); *see* Ans. 5 ("It is common sense . . . that any dimension of the building geometries, for example, length, width or height of the wall of [a] building, can be determined in a 2D image."), 8 ("[T]he extraction of building geometries (e.g., height) from the photographic images and 3D model of building" is "well-known."). As a result, the Examiner concludes that identification of building geometries (in general) would have been obvious, but the Examiner does not explain why the *claim limitations* (as specifically recited by claim 1) would have been obvious. This is insufficient.

Even if we were to agree that a person of ordinary skill in the art would know how to extract building geometries from a 2D image, the Examiner fails to explain (and it is not clear from our review) how this general knowledge (combined with the specific disclosures of Zakhor, Trinh, and Kim) teaches or suggests "analyz[ing] the geo-referenced oblique images to: . . . [1] determine ground locations for the walls of the structure; [2] determine locations and orientations of the vertical edges of the walls of the structure; [3] determine relative lengths of the walls of the structure utilizing the locations and orientations of edges of the walls of the structure," as specifically required by claim 1. App. Br. 41 (Claims App'x). The Examiner cites Trinh and Kim for the identified general knowledge—Trinh calculates vanishing points to measure building geometries generally (Trinh, p. 332), and Trinh and Kim both perform edge detection on a photographic image (*id.*; Kim ¶ 41). As for Zakhor, the Examiner cites (and we perceive) no disclosure in Zakhor of using the aerial image to determine *any* building

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geometries; rather, Zakhor uses a 3D model[6] to determine or represent building geometries. Zakhor ¶¶ 37, 38 ("[A] building's structural edge is extracted from a 3D model."); *see id.* at Abstract, ¶ 6 (using aerial image to map texture onto existing 3D model). Zakhor does make other determinations from the aerial image—it determines 2D orthogonal corners in the aerial image to create possible correlations between the aerial image and the 3D model (*id.* ¶¶ 23, 28, 38), and it uses an aerial image to determine a camera's position and orientation using vanishing points (*id.* ¶¶ 6, 22, 26–28, 33). The Examiner fails to explain how these disclosures, alone or in combination, teach or suggest the specific requirements of the disputed limitations.

In short, missing from the Non-Final Action and the Answer is a sufficient explanation for why a person of skill in the art would have found the disputed limitations, as specifically required by claim 1, to be obvious. Whether it would be *possible* for the ordinary artisan to determine building geometries, the Examiner has not shown that it would be *obvious* for an ordinary artisan to do as the claim requires. Without this necessary rationale, the Final Action does not establish a prima facie case of obviousness of the claimed invention. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring a "rational underpinning to support the legal conclusion of obviousness"), *cited with approval in KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

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[6] Zakhor states once, in passing, that 3D models "are generated from stereo aerial photographs or range sensors such as LIDARS" (*id.* ¶ 4), but the remainder of Zakhor's disclosure refers to a 3D model created by LIDAR data (*e.g.*, *id.* ¶¶ 18, 20).

Therefore, based upon the findings above, on this record, we are persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest the disputed limitations of claim 1. Accordingly, we do not sustain the Examiner's obviousness rejection of independent claim 1 (and its respective dependent claims).

Claim 16

Claim 16 recites "determining three-dimensional information of the horizontal edges and the vertical edges" of walls of a structure "using geo-referenced oblique images showing all the walls of the structure including one image from each cardinal direction." App. Br. 45–46 (Claims App'x).

The Examiner finds Zakhor teaches "determining three-dimensional information . . . using geo-referenced oblique images," but the Examiner does not address the claim's requirement that the geo-referenced oblique images include one image from each cardinal direction. Non-Final Act. 16 (emphasis omitted). In the Appeal Brief, Appellants allege the rejection is in error because the Examiner fails to show how the references teach or suggest that the claimed geo-referenced oblique images show all walls of the structure including one image from each cardinal direction. App. Br. 24–25. The Examiner does not respond to this argument in the Examiner's Answer. *See generally* Ans. In their Reply Brief, Appellants argue this limitation is not disclosed, and Appellants further note that "the Examiner makes no reference to the limitation at all." Reply Br. 3–4.

We are persuaded of Examiner error. Neither the Non-Final Office Action nor the Answer provide *any* findings or explanation regarding this claim limitation. Moreover, we see nothing in the cited portions of Zakhor that clearly teaches or suggests this claim language. Accordingly, on this

record, we are persuaded of error in the Examiner's reliance on the cited prior art combination to teach or suggest this limitation of claim 16, such that we find error in the Examiner's resulting legal conclusion of obviousness.

Therefore, we do not sustain the Examiner's obviousness rejection of independent claim 16, or independent claims 17–19, which recite the disputed limitation in commensurate form. For the same reasons, we also reverse the rejection of dependent claim 20, which depends from independent claim 19.

Obviousness Rejection R2 of Claim 15

The Examiner rejects claim 15 over a combination of Zakhor, Trinh, Kim, Guo, and Brown. Non-Final Act. 20. In light of our reversal of the rejection of independent claim 1, *supra*, we also reverse the obviousness rejection of claim 15, which depends from claim 1. On this record, the Examiner has not shown how the additionally cited reference, Brown, overcomes the aforementioned deficiencies with the combination of Zakhor, Trinh, Kim, and Guo, as discussed above regarding claim 1.

Appellants' Other Arguments

Because these determinations resolve the § 103 rejection for all pending claims, we need not address Appellants' other arguments regarding Examiner error. *See, e.g.*, *Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (explaining that an administrative agency may render a decision based on "a single dispositive issue").

NEW GROUND OF REJECTION
35 U.S.C. § 101

Section 101 of the Patent Act provides that "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" is patent eligible. 35 U.S.C. § 101. But the Supreme Court has long recognized an implicit exception to this section: "'Laws of nature, natural phenomena, and abstract ideas are not patentable.'" *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). To determine whether a claim falls within one of these excluded categories, the Court has set out a two-part framework. The framework requires us first to consider whether the claim is "directed to one of those patent-ineligible concepts." *Alice*, 573 U.S. at 217. If so, we then examine "the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 573 U.S. at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78, 79 (2012)). That is, we examine the claims for an "inventive concept," "an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 573 U.S. at 217–18 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

The Patent Office recently issued guidance regarding this framework. *See* USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance"). Under the Revised Guidance, to decide whether a claim is "directed to" an abstract idea, we evaluate whether the claim (1) recites subject matter falling within an

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abstract idea grouping listed in the Revised Guidance and (2) fails to integrate the recited abstract idea into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 51. If the claim is "directed to" an abstract idea, as noted above, we then determine whether the claim recites an inventive concept. The Revised Guidance explains that when making this determination, we should consider whether the additional claim elements add "a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field" or "simply append[] well-understood, routine, conventional activities previously known to the industry." Revised Guidance, 84 Fed. Reg. at 56.

The Judicial Exception—Abstract Idea

Claim 1 recites "computer readable medium storing a set of instructions" and a "processor" that executes the instructions to receive "one or more electronic files of geo-referenced oblique images" into "memory" and to:

> *analyze* the geo-referenced oblique images to:
>
>> *identify* a structure having at least four walls and a base within the one or more electronic files, the walls having vertical edges;
>>
>> *determine* ground locations for the walls of the structure;
>>
>> *determine* locations and orientations of the vertical edges of the walls of the structure;
>>
>> *determine* relative lengths of the walls of the structure utilizing the locations and orientations of edges of the walls of the structure to produce a series of horizontal line segments representing the base of the walls of the structure, the horizontal line segments having a relative length and an orientation, at least one of the horizontal line segments being determined from at least one horizontal edge extending a length between the vertical edges, the vertical edges having a top and a bottom, and the at least one horizontal edge being above the bottoms of the

> vertical edges such that the horizontal edge is above the base of the structure; and
>
> *assemble* the horizontal line segments based on their relative lengths and orientations to form a footprint of the structure.

App. Br. 41–42.

These limitations, under their broadest reasonable interpretation, cover steps that, but for the recitation of generic computer components, could be performed in the mind. For example, *analyzing* geo-referenced oblique images to *identify* a structure, to *determine* ground locations for the walls of the structure, to *determine* locations and orientations of edges, and to *determine* relative lengths of walls can all be performed in a person's mind; further, a person, with pencil and paper, can assemble line segments to form a footprint of the structure. Indeed, the Specification indicates that the claimed process automates a process that is otherwise done by people using their mind and pencil and paper. *E.g.,* Spec. ¶¶ 61 (noting "an operator may manually provide" data regarding the edges), 84 ("[I]n addition to providing a means for a fully automated determination of footprint 102 of structure 106, methods described herein may provide assistance for manual generation of footprint 102 of structure 106."); *see also* Zakhor ¶ 4 (referencing "a human operator visually analyzing the features"); US 2012/0101783 A1 (Stephens et al.) ¶¶ 8–9 (noting "people have used geo-referenced oblique images to measure objects and structures within the images as well as to be able to determine geographic locations of points within the image") (*incorporated by reference by* Spec. ¶ 45). And the Federal Circuit continues to "treat[ ] analyzing information by steps people go through in their minds, . . . without more, as essentially mental processes within the abstract-idea category." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016) (quoting *Elec. Power*, 830 F.3d at 1354).

In addition, the claimed limitations involve gathering (i.e., "receiv[ing] one or more electronic files . . .") and analyzing data. When claimed in a manner similar to the claims here, gathering and analyzing information using conventional techniques has been determined to be an abstract idea. *See Univ. of Fla. Research Found., Inc. v. General Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019) ("This is a quintessential 'do it on a computer' patent . . . . We have held such claims are directed to abstract ideas.") (citing *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016)).

Accordingly, we conclude the claim recites concepts performed in the human mind and, thus, an abstract idea. Revised Guidance, 84 Fed. Reg. at 52, 53 (listing "[m]ental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion)" as one of the "enumerated groupings of abstract ideas").

Integration of the Judicial Exception into a Practical Application

If a claim recites a judicial exception, 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. If the recited judicial exception is integrated into a practical application, the claim is not directed to the judicial exception.

Here, claim 1 recites the additional elements of "a processor," "one or more computer readable medium," "one or more electronic files," and "one

or more memory." Appeal Br. 41–42 (Claims App'x). Considering claim 1 as a whole, the additional elements do not apply or use the abstract idea in a meaningful way such that the claim as a whole is more than a drafting effort designed to monopolize the exception. The Supreme Court guides that the "prohibition against patenting abstract ideas 'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or [by] adding 'insignificant postsolution activity.'" *Bilski*, 561 U.S. at 610–11 (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981)).

The Specification describes each of these elements as generic components. For example, the Specification briefly refers to a processor as being a general purpose computing device. *See* Spec. ¶¶ 30, 85. Moreover, the Specification indicates that the computer readable medium may be a CD-ROM, hard drive, or computer memory. *Id.* ¶¶ 47, 85. Finally, the Specification states that the "electronic files can be any suitable format, such as JPEG, BMP, TIFF or the like." *Id.* ¶ 41. The Specification does not address how the electronic file(s) are received into memory, indicating that the function is a generic function of a computer.

We find the additional limitation(s) do not integrate the judicial exception into a practical application. More particularly, the claims do not recite (i) an improvement to the functionality of a computer or other technology or technical field (*see* MPEP § 2106.05(a)); (ii) a "particular machine" to apply or use the judicial exception (*see* MPEP § 2106.05(b)); (iii) a particular transformation of an article to a different thing or state (*see* MPEP § 2106.05(c)); or (iv) any other meaningful limitation (*see* MPEP § 2106.05(e)). *See* 84 Fed. Reg. at 55.

Accordingly, even in combination with all the other recited elements, the addition of "a processor," "one or more computer readable medium," "one or more electronic files," and "one or more memory" does not integrate the abstract idea into a practical application because it does not impose any meaningful limits on practicing the abstract idea. For these reasons, we determine that claim 1 does not integrate the recited abstract idea into a practical application.

Inventive Concept

Because we determine that claim 1 is "directed to" an abstract idea, we consider whether an additional element (or combination of elements) adds a limitation that is not well-understood, routine, conventional ("WURC") activity in the field or whether the additional elements simply append WURC activities previously known to the industry, specified at a high level of generality, to the judicial exception. Revised Guidance, 84 Fed. Reg. at 23. Whether the additional elements ("a processor," "one or more computer readable medium," "one or more electronic files," and "one or more memory") are WURC activity is a question of fact. *See Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) ("Whether something is well-understood, routine, and conventional to a skilled artisan . . . is a factual determination.").

On the record before us, we find that the claims on appeal do not add a specific limitation beyond the judicial exception that is not "well-understood, routine, and conventional" in the field (*see* MPEP § 2106.05(d)). As discussed above, Appellants' Specification demonstrates the WURC nature of the additional limitations because it indicates they may be implemented with generic devices. Spec. ¶¶ 30–40. In addition, courts

have recognized that performing a mental process with generic computer components, in a manner similar to that recited in the claims, is WURC. *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*.").

For these reasons, we conclude that claim 1, considered as a whole, does not include an inventive concept. Accordingly, we reject claim 1 under 35 U.S.C. § 101 as directed to patent ineligible subject matter.

Claims 16–19

We have evaluated the remaining independent claims (i.e., claims 16–19) using the framework provided above and, similarly, conclude that they recite patent ineligible subject matter.

The limitations of these claims, under their broadest reasonable interpretation, cover steps that, but for the recitation of generic computer components, could be performed in the mind. Each of these claims requires *identifying* horizontal edges and vertical edges, *determining* three-dimensional information of these edges using geo-reference oblique images from each cardinal direction, *determining* a ground location for each wall, *comparing* the location and orientation of one or more horizontal edges with the ground locations for the walls, and *determining* the location of one or more edges as being above the ground locations for the walls, all of which can be performed in a person's mind; further, a person, with pencil and paper, can create line segments and form a footprint of the structure. Accordingly, we conclude these claims recite a concepts performed in the human mind, and thus, an abstract idea. Revised Guidance, 84 Fed. Reg.

at 52, 53 (listing "[m]ental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion)" as one of the "enumerated groupings of abstract ideas").

Moreover, claims 16–19 recite the additional elements of "a processor," "computer readable medium," "one or more electronic files," "non-transitory memory," and "a computer system." App. Br. 45–50 (Claims App'x). Considering these claims as a whole, the additional elements do not apply or use the abstract idea in a meaningful way such that the claim as a whole is more than a drafting effort designed to monopolize the exception. For the reasons explained above with claim 1, we determine that claims 16–19 do not integrate the recited abstract idea into a practical application.

Finally, on the record before us, we find that these claims do not add a specific limitation beyond the judicial exception that is not "well-understood, routine, and conventional" in the field (*see* MPEP § 2106.05(d)). As discussed above, Appellants' Specification demonstrates the WURC nature of the additional limitations because it indicates they may be implemented with generic devices. In addition, as noted above, courts have recognized that performing a mental process with generic computer components, in a manner similar to that recited in the claims, is WURC.

For these reasons, we conclude that each of claims 16–19, considered as a whole, does not include an inventive concept. Accordingly, we reject claims 16–19 under 35 U.S.C. § 101 as directed to patent ineligible subject matter.

Dependent Claims

We have reviewed all of the dependent claims (i.e., claims 2–10, 12–15, and 20) and find that they similarly recite ineligible subject matter. These dependent claims are directed to the same abstract idea as their respective independent claim, and none of these claims recite additional elements that provide a practical application or add a limitation that is not well-understood, routine and conventional in the field. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (explicit discussion of individual claims not necessary when discussed claims are sufficiently representative). Accordingly, we reject claims 2–10, 12–15, and 20 under 35 U.S.C. § 101 as directed to patent ineligible subject matter.

DECISION

We reverse the Examiner's decision rejecting claims 1–10 and 12–20 under 35 U.S.C. § 103(a).

We hereby enter a NEW GROUND OF REJECTION under 35 U.S.C. § 101 that claims 1–10 and 12–20 fail to recite patent eligible subject matter.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." Section 41.50(b) also provides:

> When the Board enters such a non-final decision, the appellant, within two months from the date of the decision, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:
>
> (1)   *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new Evidence relating

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to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. The new ground of rejection is binding upon the examiner unless an amendment or new Evidence not previously of Record is made which, in the opinion of the examiner, overcomes the new ground of rejection designated in the decision. Should the examiner reject the claims, appellant may again appeal to the Board pursuant to this subpart.

(2)   *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. The request for rehearing must address any new ground of rejection and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

Further guidance on responding to a new ground of rejection can be found in the Manual of Patent Examining Procedure § 1214.01.

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).

<u>REVERSED; 37 C.F.R. § 41.50(b)</u>