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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ETHEM F. CAN, RICHARD W. CROWELL,
JAMES TETTERTON, JARED PETERSON and SARATENDU SETHI

Appeal 2019-002869
Application 15/630,462
Technology Center 2600

Before ST. JOHN COURTENAY III, LARRY J. HUME, and
PHILLIP A. BENNETT, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision rejecting claims 1–30, which are all claims pending in the application. *See* Appeal Br. 15 *et seq*. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the term "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as SAS Institute Inc. Appeal Br. 2.

STATEMENT OF THE CASE[2]

The claims are directed to "systems for summarizing data visualizations (i.e., images of data visualizations), such as a graph image". Abst. In particular, Appellant's disclosed embodiments include:

> Various embodiments described herein include a personalized graph summarizer that can generate relevant and useful summaries of data visualizations without relying on annotations or data files that include underlying data or information to be communicated by the data visualization.

Spec. ¶ 60.

Furthermore, Appellant's personalized graph summarizer may enable

> customized, efficient, and accurate detection of patterns in a data visualization to provide relevant and useful summaries of the data visualization, resulting in several technical effects and advantages. In various embodiments, the personalized graph summarizer may be implemented via one or more computing devices, and thereby provide additional and useful functionality to the one or more computing devices, resulting in more capable and better functioning computing devices. For example, the personalized graph summarizer may enable a computing device to assist the visually impaired with interpreting and understanding data visualizations. One or more embodiments can involve computer vision.

Spec. ¶ 61.

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[2] Our decision relies upon Appellant's Appeal Brief ("Appeal Br.," filed Sept. 28, 2018); Reply Brief ("Reply Br.," filed Feb. 28, 2019); Examiner's Answer ("Ans.," mailed Dec. 28, 2018); Final Office Action ("Final Act.," mailed April 30, 2018); and the original Specification ("Spec.," filed June 22, 2017).

Exemplary Claim

Claim 11, reproduced below, is representative of the subject matter on Appeal:

> 11. A computer-implemented method, comprising:
>
> identifying a data visualization comprising a graph image;
>
> determining a set of graph-type correlation scores for the graph image, the set of graph-type correlation scores to include a graph-type correlation score for each graph type of a plurality of graph types, each graph-type correlation score based on a comparison of at least a portion of the graph image with one or more graph-type models associated with each graph type of the plurality of graph types;
>
> evaluating the set of graph-type correlation scores to identify a graph type of the graph image;
>
> retrieving a set of patterns based on the graph type of the graph image, each pattern in the set of patterns to include one or more pattern examples;
>
> determining a set of region of interest correlation scores for the graph image based on matching the one or more pattern examples of each pattern in the set of patterns with at least a portion of the graph image, the set of region of interest correlation scores to include at least one region of interest correlation score for each pattern in the set of patterns;
>
> evaluating the set of region of interest correlation scores to identify one or more candidate regions of interest of the graph image, each of the one or more candidate regions of interest to include a portion of the graph image;
>
> retrieving a set of pattern models based on the set of candidate regions of interest of the graph image, each candidate region of interest in the set of candidate regions of interest associated with one pattern model in the set of pattern models, and each pattern model in the set of pattern models associated with one pattern in the set of patterns;

> comparing each candidate region of interest in the set of candidate regions of interest to an associated pattern model in the set of pattern models to determine a set of pattern model correlation scores, the set of pattern model correlation scores to include a pattern model correlation score for each candidate region of interest of the one or more candidate regions of interest;
>
> identifying one or more detected patterns based on the set of pattern model correlation scores;
>
> retrieving one or more text templates from a computer-readable storage medium based on the one or more detected patterns, the one or more text templates to include at least one portion of text associated with each detected pattern of the one or more detected patterns, each text template of the one or more text templates associated with a priority level;
>
> arranging the one or more text templates in an order based on the priority level associated with each text template to generate a textual description of the graph image; and
>
> generating a personalized summary of the graph image based on the textual description with the one or more text templates ordered based on the priority level associated with each text template.

REJECTION

Claims 1–30 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. 4.

ISSUE

Appellant argues (Appeal Br. 43–50; Reply Br. 2–9) the Examiner's rejection of claims 1–30 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 11 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.[3] However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *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

[3] 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.

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))).

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.").

Examples of claims that do not recite mental processes because they cannot be practically performed in the human mind include: (a) a claim to a method for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals, where the claimed GPS receiver calculated pseudoranges that estimated the distance from the GPS

receiver to a plurality of satellites, *SiRF Technology, Inc. v. International Trade Commission*, 601 F.3d 1319, 1331–33 (Fed. Cir. 2010); (b) a claim to detecting suspicious activity by using network monitors and analyzing network packets, *SRI International, Inc. v. Cisco Systems, Inc*., 930 F.3d 1295, 1304 (Fed. Cir. 2019); (c) a claim to a specific data encryption method for computer communication involving a several-step manipulation of data, *Synopsys, Inc. v. Mentor Graphics Corp*., 839 F.3d 1138, 1149 (Fed. Cir. 2016) (distinguishing *TQP Development, LLC v. Intuit Inc*., 2014 WL 651935 (E.D. Tex. Feb. 19, 2014)) (the specific data encryption method "could not conceivably be performed in the human mind or with pencil and paper"). Whereas a claim limitation to a process that "can be performed in the human mind, or by a human using a pen and paper" qualifies as a mental process, a claim limitation that "could not, as a practical matter, be performed entirely in a human's mind" (even if aided with pen and paper) would not qualify as a mental process.[4]

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

[4] *CyberSource Corp. v. Retail Decisions, Inc*., 654 F.3d 1366, 1372, 1375–76 (Fed. Cir. 2011) (distinguishing *Research Corp. Techs. v. Microsoft Corp*., 627 F.3d 859 (Fed. Cir. 2010), and *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319 (Fed. Cir. 2010)).

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

If the claim is "directed to" an abstract idea, we turn to the second 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 USPTO published revised guidance in the Federal Register concerning the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (hereinafter "Revised Guidance") (https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf). All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." *Id.* at 51; *see also*

October 2019 Update at 1 (*October 2019 Update: Subject Matter Eligibility*) (hereinafter "October 2019 Update").

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

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes);[5] and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* Manual for Patent Examining Procedure ("MPEP") §§ 2106.05(a)–(c), (e)–(h)).[6]

See Revised Guidance, at 52–53.

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

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.[7]

See Revised Guidance, at 56.

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

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

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

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).

Revised Guidance, at 52 (footnotes omitted).

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

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

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.

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

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

(2) MPEP § 2106.05(b) Particular Machine

(3) MPEP § 2106.05(c) Particular Transformation

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

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

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

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

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

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

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

[11] *See, e.g.*, *Amdocs, Ltd. v. Openet Telecom, Inc*., 841 F.3d 1288, 1300, 1304 (Fed. Cir. 2016); *BASCOM Glob. Internet Servs., 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).

combination under *Step 2B* to determine whether they provide an inventive concept (i.e., whether the additional elements amount to significantly more than the exception itself).[12]

Under the Revised Guidance, we must consider in *Step 2B* whether an additional element or combination of elements: (1) "Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present;" or (2) "simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present." *See* Revised Guidance, Section III.B.[13]

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

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

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). . . .

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

We agree with particular arguments made by Appellant with respect to claims 1–30 in the rejection, and we highlight and address specific findings and arguments regarding method claim 11 for emphasis as follows.

Step 1 – Statutory Category

Claim 11 as a method 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:

> [T]he claims simply describe the concept of collecting information, analyzing it, and displaying certain results of the collecting an analysis, which relate to the abstract idea of human organizing of activities. A human using a pen and paper can perform the steps of *identifying a graph type of a graph image based on correlation scores; determine a region of interest based on correlation scores; detecting patterns based on the set of pattern model correlation scores; retrieving one or more text templates based on the one or more detected patterns; arranging the one or more text templates to generate a textual description of the graph image; and generating a personalized summary of the graph image, the summary of the graph image comprising the graph image and the textual description of the graph image.*

Final Act. 5–6.

We conclude claim 11 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate, *de novo*, whether claim 11 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 "Various embodiments are generally directed to systems for summarizing data visualizations (*i.e.,* images of data visualizations), such as a graph image, for instance." Spec. ¶ 57.

Appellant's Abstract describes the invention as:

> Various embodiments are generally directed to systems for summarizing data visualizations *(i.e.*, images of data visualizations), such as a graph image, for instance. Some embodiments are particularly directed to a personalized graph summarizer that analyzes a data visualization, or image, to detect pre-defined patterns within the data visualization, and produces a textual summary of the data visualization based on the pre-defined patterns detected within the data visualization. In various embodiments, the personalized graph summarizer may include features to adapt to the preferences of a user for generating an automated, personalized computer generated narrative. For instance, additional pre-defined patterns may be created for detection and/or the textual summary may be tailored based on user preferences. In some such instances, one or more of the user preferences may be automatically determined by the personalized graph summarizer without requiring the user to explicitly indicate them. Embodiments may integrate machine learning and computer vision concepts.

Abstract.

In TABLE I below, we identify in *italics* the specific claim limitations in claim 11 that we conclude recite an abstract idea. We additionally identify in **bold** the additional (non-abstract) claim limitations that are practical applications, and <u>underline</u> limitations representing extra or post-solution activity (bracketed labeling added for clarity):

TABLE I

Independent Claim 11	Revised Guidance
A **computer**-implemented method, comprising:	A process (method) is a statutory subject matter class. *See* 35 U.S.C. § 101. *See* 35 U.S.C. § 101 ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.").
[L1] *identifying* a data visualization comprising a graph image;	"[I]dentifying a data visualization comprising a graph image," is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process. *See* Revised Guidance 52. This step 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*.").
[L2] *determining* a set of graph-type correlation scores for the graph image, the set of graph-type correlation scores to include a graph-type correlation score for each graph type of a plurality of graph types, each graph-type correlation score based on a comparison of at least a portion	"[D]etermining a set of graph-type correlation scores for the graph image" is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process or, alternatively, it is an abstract idea in the form of a mathematical concept. *See* Revised Guidance, at 52.

Independent Claim 11	Revised Guidance
of the graph image with one or more graph-type models associated with each graph type of the plurality of graph types;	
[L3] *evaluating* the set of graph-type correlation scores to identify a graph type of the graph image;	"[E]valuating the set of graph-type correlation scores, is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process. *See* Revised Guidance, at 52. This step 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*.").
[L4] retrieving a set of patterns based on the graph type of the graph image, each pattern in the set of patterns to include one or more pattern examples;	Retrieving a set of patterns, 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; *see also* MPEP § 2106.05(g); *and see buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (computer receives and sends information over a network).
[L5] *determining* a set of region of interest correlation scores for the graph image based on matching the one or more pattern examples of each pattern in the set of patterns with at least a portion of the graph image, the	"[D]etermining a set of region of interest correlation scores for the graph image" is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process or, alternatively, it is an abstract idea in the form of a

Independent Claim 11	Revised Guidance
set of region of interest correlation scores to include at least one region of interest correlation score for each pattern in the set of patterns;	mathematical concept. *See* Revised Guidance, at 52.
[L6] *evaluating* the set of region of interest correlation scores to identify one or more candidate regions of interest of the graph image, each of the one or more candidate regions of interest to include a portion of the graph image.	"[E]valuating the set of graph-type correlation scores," is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process. *See* Revised Guidance, at 52.
[L7] retrieving a set of pattern models based on the set of candidate regions of interest of the graph image, each candidate region of interest in the set of candidate regions of interest associated with one pattern model in the set of pattern models, and each pattern model in the set of pattern models associated with one pattern in the set of patterns;	Retrieving a set of pattern models, 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, at 55 n.31; *see also* MPEP § 2106.05(g); *and see buySAFE, Inc. v. Google, Inc*., 765 F.3d 1350, 1355 (Fed. Cir. 2014) (computer receives and sends information over a network)
[L8] *comparing* each candidate region of interest in the set of candidate regions of interest to an associated pattern model in the set of pattern models to determine a set of pattern model correlation scores, the set of pattern model correlation scores to include a pattern model correlation score for each candidate region of	"[C]omparing each candidate region of interest in the set of candidate regions of interest to an associated pattern model in the set of pattern models to determine a set of pattern model correlation scores" is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process or, alternatively, it is an abstract idea in the form of a

Independent Claim 11	Revised Guidance
interest of the one or more candidate regions of interest;	mathematical concept. *See* Revised Guidance, at 52.
[L9] *identifying* one or more detected patterns based on the set of pattern model correlation scores;	"[I]dentifying one or more detected patterns based on the set of pattern model correlation scores," is an abstract idea, i.e., "an observation, evaluation, judgment, opinion" which could be performed as a mental process. *See* Revised Guidance, at 52.
[L10] retrieving one or more text templates from a computer-readable storage medium based on the one or more detected patterns, the one or more text templates to include at least one portion of text associated with each detected pattern of the one or more detected patterns, each text template of the one or more text templates associated with a priority level;	Retrieving one or more text templates from a computer-readable storage medium, i.e., data gathering, is insignificant extra-solution activity that does not add significantly more to the abstract idea to render the claimed invention patent-eligible. Revised Guidance, at 55 n.31; *see also* MPEP § 2106.05(g); *and see buySAFE, Inc. v. Google, Inc*., 765 F.3d 1350, 1355 (Fed. Cir. 2014) (computer receives and sends information over a network).
[L11] arranging the one or more text templates in an order based on the priority level associated with each text template to generate a textual description of the graph image	*See Step 2A(ii)* analysis.
[L12] generating a personalized summary of the graph image based on the textual description with the one or more text templates ordered based on the priority level associated with each text template	*See Step 2A(ii)* analysis.

Appeal Br. 55–56 (Claims App.).

Under the broadest reasonable interpretation standard,[14] we conclude limitations [L1] through [L10] of method claim 11 recite steps that would ordinarily occur when summarizing data visualizations. *See* claim 11. For example, determining a set of graph-type correlation scores for the graph image, evaluating the scores to identify a graph type of the graph image, comparing each candidate region of interest to an associated pattern module to determine a set of pattern model correlation scores are steps that generally occur when generating a personalized summary of a graph using templates and correlation scores.

We determine that claim 11, as a whole, recites mental processes that may also be performed by a person in their mind, or with the aid of pen and paper. This type of activity, as recited by limitations [L1]–[L3], [L5], [L6], [L8], and [L9], 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,

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

even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").[15]

Thus, under *Step 2A(i)*, we agree with the Examiner that method claim 11 recites abstract ideas and conclude, under our Revised Guidance, claim 11 recites a judicial exception of summarizing data visualizations, i.e., a mental process, and thus is an abstract idea.

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

Because the claims are directed to a judicial exception, as we conclude above, we proceed to the "practical application" *Step 2A(ii)* in which we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

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[15] 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).

In this phase of analysis, Appellant argues "any abstract concepts incidentally covered by the claim language are clearly integrated into a practical application that generates a personalized summary of a graph image." Appeal Br. 44.

Appellant argues, similar to *McRo,*

> [T]the claimed subject matter provides an improvement in computer-related technology by allowing computer performance of a function not previously performable by a computer. For example, generating a personalized summary of a data visualization enables information contained in the data visualization to be communicated to a visually impaired person (e.g., complete or partial blindness, low vision, color blindness). *See e.g.*, Specification, 0061 and 0176. Further, the summaries of data visualizations can clearly communicate relevant parts of data visualizations in an efficient and effective manner, resulting in a computing device and/or system with exclusive and advantageous capabilities, such as providing improved computer vision features and improved computer accessibility functionality for computer users with disabilities.

Appeal Br. 46–47.

When doing a Prong-Two determination, we identify "additional elements recited in the claim beyond the judicial exception[]," and we then evaluate whether the so-identified additional elements "integrate the exception into a practical application." Revised Guidance, at 54–55. Additional elements are "claim features, limitations, and/or steps that are recited in the claim beyond the identified judicial exception." *Id.* at 55 n.24. Here, the additional elements include limitations [L11] "arranging" and [L12] "generating" steps that arrange the text templates of the graph image in an order and generate a personalized summary of the graph image based on the textual description with the ordered text templates.

The Examiner finds these two steps are merely a process of gathering and analyzing information of a specified content, and then displaying the results, and not as any particular inventive technology for performing those functions. Ans. 4.

We disagree with the Examiner's findings. As stated in the Revised Guidance, "[i]t is critical that examiners consider the claim as a whole when evaluating whether the judicial exception is meaningfully limited by integration into a practical application of the exception." Revised Guidance, at 54. Although "[s]ome elements may be enough on their own to meaningfully limit an exception . . . other times it is the combination of elements that provide the practical application." *Id*.

Here, we are persuaded by Appellant's argument and find the "arranging" and "generating" limitations provide a personalized graph summarizer that enables a computer to assist the visually impaired with interpreting and understanding data visualizations. Spec. ¶ 61. We further find these limitations that generate a textual summary of a data visualization and enable information contained in the data visualization to be communicated to a visually impaired person to be a practical application of the abstract ideas of claim 11. Spec. ¶ 176. We determine the Examiner has not considered the effect of the steps recited in claim 11 as a whole.

Therefore, on the record before us, although we find claim 11 recites an abstract idea, we conclude the claim is not "directed to" an abstract idea because it integrates the abstract idea into a practical application. As such, "this concludes the eligibility analysis." Revised Guidance, at 54.

Therefore, in light of the foregoing, we conclude, under the Revised Guidance, that each of Appellant's claims 1–30, considered as a whole,

recites a patent-ineligible abstract idea that is integrated into a practical application. Accordingly, we do not sustain the Examiner's § 101 rejection of independent claim 11, and independent claims 1 and 21 that recite commensurate limitations. We also do not sustain the dependent claims 2–10, 12–20, and 22–30 that depend therefrom.

CONCLUSION

Under our Revised Guidance, governed by relevant case law, claims 1–30 are patent-eligible under 35 U.S.C. § 101, and we do not sustain the rejection.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	References/ Basis	Affirmed	Reversed
1–30	101	Subject Matter Eligibility		1–30

REVERSED