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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PERRY ROBINSON MacNEILLE,
OLEG YURIEVITCH GUSIKHIN, YIMIN LIU,
DAVID ALLEN KOWALSKI, and
GARY STEVEN STRUMOLO

Appeal 2018-007841
Application 13/803,215
Technology Center 3600

Before BRADLEY W. BAUMEISTER, ADAM J. PYONIN, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–7, 11, 12, 18, and 21–27, which constitute all of the pending claims.¹ Appeal Br. 3–10. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Ford Global Technologies, LLC. Appeal Brief filed August 2, 2017 (“Appeal Br.”), 1.

CLAIMED SUBJECT MATTER

Appellant describes the present invention as follows:

A vehicle computer system comprising a receiver configured to wirelessly receive an advertisement, the advertisement including two or more ad components for output to a user, the receiver further configured to communicate the advertisement to a processor. The processor is configured to receive contextual data representative of a vehicle's environment from one or more data sources, output the advertisement and a first set of ad components to the user based on the contextual data, the first set of ad components including a request to interact with the user, receive an input from a user corresponding to the first set of ad components, and output a second set of ad components based on the input received from the user.

Abstract.

STATEMENT OF THE REJECTIONS

Claims 1–7, 11, 12, 18, and 21–27 stand rejected under 35 U.S.C. § 101 as being directed to an exception to patent-eligible subject matter without reciting significantly more. Final Act. 2–5.²

Claims 18 and 24–27 stand rejected under 35 U.S.C. § 112(b) (or under pre-AIA § 112, ¶ 2) as failing to particularly point out and distinctly claim the subject matter that Appellant regards as the invention. Final Act. 5–6.

Claims 1–7, 11, 12, 18, and 21–27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable. Final Act. 7–17.

² Rather than repeat the Examiner's positions and Appellant's arguments in their entirety, we refer to the above-mentioned Appeal Brief, as well as the following documents, for their respective details: the Final Action mailed March 3, 2017 ("Final Act."); the Examiner's Answer mailed May 24, 2018 ("Ans."); and the Reply Brief filed July 24, 2018 ("Reply Br.").

STANDARD OF REVIEW

The Board conducts a limited *de novo* review of the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

THE SECTION 101 REJECTION

The Claimed Invention

Independent claim 1 represents the appealed claims.³ Claim 1 is reproduced below with paragraph numbering added for ease of reference and emphasis added to the claim language that recites an abstract idea:

1. A vehicle computer system comprising:

a receiver configured to wirelessly receive at a vehicle a plurality of ad components identifying portions of an advertisement for output to a user, the receiver further configured to communicate the advertisement to a processor, the processor configured to:

[(a)] *receive contextual data representative of a vehicle's environment from one or more vehicle sensors;*

[(b)] *determine a workload value associated with a driver of a vehicle utilizing the contextual data and the one or more vehicle sensors;*

[(c)] *output the advertisement and a first set of ad components selected from the plurality of ad components received at the vehicle to a vehicle display based on the contextual data and the workload value, the first set of ad components including a request to interact with a user;*

³ Appellant argues all of the claims together as a group. Appeal Br. 3–7. Accordingly, we select independent claim 1 as representative. 37 C.F.R. § 41.37(c)(1)(iv).

[(d)] *receive an input using a vehicle interface corresponding to the first set of ad components; and*

[(e)] *output to the vehicle display a second set of ad components responsive to the input and selected from the plurality of ad components received at the vehicle.*

Examiner's Determinations and Appellant's Contentions

The Examiner determines, “[independent] claim 1 is just the system embodiment of the method of claim 18 and nothing significantly more.” Final Act. 5. According to the Examiner, “[t]he system at best describes an environment in which to carry out the abstract idea.” *Id.* The Examiner, applying the eligibility analysis to claim 18, finds,

[c]laim 18 recites, in part, a method performing the steps of receiving an advertisement that includes a plurality of ad components; outputting a first and second set of ad components responsive to a workload value of a driver using contextual data received falling below a threshold value, wherein the second set of ad components is selected from the plurality of ad components and output responsive to input.

Final Act. 2. The Examiner determines that “[e]ssentially, the claimed invention is simply collecting data, analyzing/comparing the data to determine a value, and notifying/displaying to the user the results (i.e., the selected/outputted advertisement data).” *Id.* at 3.

The Examiner determines that independent claim 18 is directed to processes that can be performed in the human mind or by a human using a pen and paper. *Id.* at 2–3. The Examiner also determines that claim 18 is directed to collecting data and outputting advertisements responsive to the collected data. *Id.* at 2.

The Examiner additionally determines that Appellant’s Specification lists the additional elements only as generic computers and components. *Id.*

at 4. The Examiner determines that “[t]here is no indication that the combination of [additional] elements improves the functioning of a computer or improves any other technology.” *Id.* The Examiner determines, then “[t]he claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements, which are recited at a high level of generality, provide conventional computer functions that do not add meaningful limits to practicing the abstract idea.” *Id.* at 2.

Appellant argues that “the Final Office Action has failed to show the claims are directed to a judicial exception.” Appeal Br. 4. Appellant further argues various reasons why the claims are not directed to an abstract idea and why the claims recite significantly more than an abstract idea. *Id.* at 3–7. We address these arguments individually in our analysis below.

Principles of Law

A. SECTION 101:

Inventions for a “new and useful process, machine, manufacture, or composition of matter” generally constitute patent-eligible subject matter. 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court’s two-step framework, described in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), and *Alice*. *Alice*, 573 U.S. at 217–18 (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” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

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).

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“[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

B. USPTO SECTION 101 GUIDANCE:

In January 2019, the U.S. Patent and Trademark Office (“USPTO”) published revised guidance on the application of 35 U.S.C. § 101. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Guidance”), *updated by* USPTO, *October 2019 Update: Subject Matter Eligibility* (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf) (“October 2019 Guidance Update”); *see also* October 2019 Patent Eligibility Guidance Update, 84 Fed. Reg. 55942 (Oct. 18, 2019) (notifying the public of the availability of the October 2019 Guidance Update). “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” 2019 Guidance, 84 Fed. Reg. at 51; *see also* October 2019 Guidance Update at 1.

Under the 2019 Guidance, we first look to whether the claim recites the following:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes); and
 - (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)).
- 2019 Guidance, 84 Fed. Reg. at 52–55.

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, [and] 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.

2019 Guidance, 84 Fed. Reg. at 56.

Analysis

STEP 2A, PRONG 1:

Under step 2A, prong 1, of the 2019 Guidance, we first look to whether the claim recites any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes). 2019 Guidance, 84 Fed. Reg. at 52–54.

Limitation (a) recites “receiv[ing] contextual data representative of a vehicle’s environment.” Receiving this sort of data or information constitutes a certain method of organizing human activity. More specifically, receiving this sort of data constitutes a method of managing interactions between people because the received data or information provides parameters that instruct or constrain the workload determination that subsequently is being performed in step (b), as discussed below. The 2019 Guidance expressly recognizes this certain method of organizing

human activity as constituting a patent-ineligible abstract idea.

2019 Guidance, 84 Fed. Reg. at 52. Also,

the sub-groupings [within the exception of “Certain Methods of Organizing Human Activity”] encompass both activity of a single person (for example, a person following a set of instructions or a person signing a contract online) and activity that involves multiple people (such as a commercial interaction), and thus, certain activity between a person and a computer (for example a method of anonymous loan shopping that a person conducts using a mobile phone) may fall within the “certain methods of organizing human activity” grouping. The number of people involved in the activity is not dispositive as to whether a claim limitation falls within this grouping. Instead, the determination should be based on whether the activity itself falls within one of the sub-groupings.

October 2019 Guidance Update at 5.

Receiving the contextual data, as claimed, also constitutes a mental process that entails making a mental observation. For example, the recited step of receiving contextual data representative of a vehicle’s environment reads on a human being observing information on a dashboard or events and conditions that exist outside of the vehicle. In addition to the category of “certain methods of organizing human activity,” the 2019 Guidance also recognizes mental processes, including observations that can be performed in the human mind, as constituting a patent-ineligible abstract idea.

2019 Guidance, 84 Fed. Reg. at 52. Accordingly, limitation (a) recites a patent-ineligible abstract idea.

Limitation (b) recites “determine a workload value associated with a driver of a vehicle utilizing the contextual data and the one or more vehicle sensors.” Determining a workload value, as claimed, constitutes a mental process that can be performed in the human mind or with the aid of pencil

and paper. For example, the step reads on a passenger determining that an observed driver is occupied or not and assigning a value of “1” or “0,” for example, to those respective determinations. The 2019 Guidance expressly recognizes observations, evaluations, and judgements as patent-ineligible abstract ideas. 2019 Guidance, 84 Fed. Reg. at 52. Accordingly, limitation (b) recites a patent-ineligible abstract idea.

Limitation (c) recites “output the advertisement and a first set of ad components selected from the plurality of ad components received at the vehicle . . . based on the contextual data and the workload value, the first set of ad components including a request to interact with a user.” Outputting advertisements and ad components constitutes a certain method of organizing human activity. More specifically, outputting advertisements constitutes advertising, marketing, or sales activities or behaviors. The 2019 Guidance expressly recognizes these certain methods of organizing human activity as constituting a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

Outputting advertisements also constitutes a mental process. More specifically, transmitting advertisements entails expressing or communicating an opinion to another. The 2019 Guidance’s mental processes exception additionally sets forth expressing opinions, as constituting a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52. Accordingly, limitation (c) recites a patent-ineligible abstract idea.

Limitation (d) recites “receiv[ing] an input . . . corresponding to the first set of ad components.” For the reasons discussed above in relation to limitation (a), the information-receiving step of limitation (d) also recites a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

Limitation (e) recites “output . . . a second set of ad components responsive to the input and selected from the plurality of ad components received at the vehicle.” For the reasons discussed above in relation to limitation (c), the outputting step of limitation (e) also recites a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

For these reasons, each of limitations (a) through (e) recites a judicial exception to patent-eligible subject matter under step 2A, prong 1, of the 2019 Guidance. *See RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.”)

STEP 2A, PRONG 2:

Under step 2A, prong 2, of the 2019 Guidance, we next analyze whether claim 1 recites additional elements that individually or in combination integrate the judicial exception into a practical application. 2019 Guidance, 84 Fed. Reg. at 53–55. The 2019 Guidance identifies considerations indicative of whether an additional element or combination of elements integrate the judicial exception into a practical application, such as an additional element reflecting an improvement in the functioning of a computer or an improvement to other technology or technical field. *Id.* at 55; MPEP § 2106.05(a).

Appellant argues that the PTO guidelines on subject matter eligibility state that “[c]iting to an appropriate court decision that supports the identification of subject matter recited in the claim language as an abstract idea is a best practice that will advance prosecution,” and Appellant argues that the Examiner errs for citing to non-analogous case law in support of the determination that the claims are directed to an abstract idea. Appeal Br. 3–

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4 (citing USPTO Memorandum, Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant’s Response to a Subject Matter Eligibility Rejection (May 4, 2016) *available at* <https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf> (“the 2016 Memorandum”)).

This argument is unpersuasive. The 2019 Guidance supersedes the 2016 Memorandum. *See* 2019 Guidance, 84 Fed. Reg. 50 (“The 2019 Revised Patent Subject Matter Eligibility Guidance revises the procedures for determining whether a patent claim or patent application claim is directed to a judicial exception.”). Regardless, then, of whether the 2016 Memorandum actually required Examiners to cite to case law in support of their legal determinations or whether it merely found such citations to be laudable, we find no error in the Examiner’s determination pursuant to the 2019 Guidance.

Appellant also argues that “the Final Office Action failed to provide any explanation [of] how the alleged abstract idea of ‘collecting contextual data to determine a workload value (e.g. driver attention level) and outputting advertisements based on the workload value and received user inputs’ corresponds to any established judicial exception.” *Id.* at 4. This argument is unpersuasive. The Examiner states that the claim steps correspond to mental processes. Final Act. 2–3. Furthermore, the preceding sub-section of this Decision’s Analysis section sets forth explanations of how the claim steps recite various abstract ideas.

Appellant argues that the Examiner's following statement of the rejection is inaccurate:

[A] human using the mind or pen and paper, can receive advertisements and ad components, determine a workload value of a driver using contextual data that was received from a vehicle sensor, and output first and second set of ad components if the workload value is below a certain threshold, and output the second set of ad components in response to receiving input.

Appeal Br. 4 (citing Final Act. 3). According to Appellant, "the claims specifically state that the processor receives 'contextual data representative of a vehicle's environment from one or more vehicle sensors.'" *Id.* at 4. Appellant argues that "[a] human mind or pen and paper cannot mimic collecting data from vehicle sensors in an effort to represent the vehicle's environment." *Id.* Appellant asserts, "such data is specific electronic data that cannot be deciphered by the human brain alone." *Id.*

This argument is unpersuasive because the act of "receiv[ing] contextual data representative of a vehicle's environment from one or more vehicle sensors" reads on a human observing the vehicle's environment and information displayed on a vehicle's dashboard.

Appellant argues that because "the claims require that the advertisement is output to a vehicle display, . . . a human or pen and paper cannot output the advertisement to the vehicle display." Appeal Br. 4. This argument is not persuasive. While outputting an advertisement specifically to a *vehicle* display may not constitute an abstract idea, outputting an advertisement to a display, more generally, reads on the abstract idea of, for example, a human printing advertisements on fliers or billboards.

The only portion of this limitation that constitutes an additional element is the requirement that the display more specifically be a vehicle

display. As such, Appellant’s argument improperly conflates the underlying abstract idea with the additional element—a vehicle display. *See BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept.” (Citation omitted)); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a new abstract idea is still an abstract idea.”) (emphasis omitted); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (“What is needed is an inventive concept in the non-abstract application realm.”).

Appellant argues that “the claims are directed to a specific environment, a vehicle environment, and do not preclude all technological innovation of the field of invention.” Appeal Br. 4. We understand Appellant to be arguing that the claim is not patent-ineligible because the claim does not pre-empt all technological invention in the relevant field. This argument is unpersuasive, as merely “linking the use of the judicial exception to a particular technological environment” does not confer patent eligibility. 2019 Guidance, 84 Fed. Reg. at 55.

We recognize that the Court has described “the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of pre-emption.” *Alice*, 573 U.S. at 216. However, characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. As our reviewing court has explained: “The Supreme Court has made clear that the principle of preemption is the basis for the

judicial exceptions to patentability” and “[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 573 U.S. at 216). Although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa*, 788 F.3d at 1379.

Appellant argues, “an invention’s ability to run on a general-purpose computer does not doom the claims if they are directed to an improv[ement] in the functioning of a computer.” Appeal Br. 4 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1338 (Fed. Cir. 2016)). Appellant argues that in the present case, “the claims are directed to a specific vehicle computer system, [and] they improve the vehicle computer system by utilizing data collected from vehicle sensors to identify when to output advertisements. Furthermore, the claims utilize various inputs on a vehicle interface [and] send input that influence[s] other ads.” Appeal Br. 4–5.

This argument is unpersuasive. The limitation of receiving data from vehicle sensors, as recited in limitation (a), and the limitation of receiving inputs from a vehicle interface, as recited in limitation (d), do not add significantly more to the abstract idea because they merely are directed to insignificant extra-solution activity:

An example of pre-solution activity is a step of gathering data for use in a claimed process, *e.g.*, a step of obtaining information about credit card transactions, which is recited as part of a claimed process of analyzing and manipulating the gathered information by a series of steps in order to detect whether the transactions were fraudulent.

MPEP § 2106.05(g).

Similarly, claim 1's steps of outputting advertisements and ad components specifically to a vehicle display, as recited in limitations (c) and (e), do not add any meaningful limitations to the noted abstract ideas because they merely constitute the insignificant post-solution activity of outputting or displaying data. *See, e.g., Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241–42 (Fed. Cir. 2016) (holding that printing or downloading generated menus constituted insignificant extra-solution activity).

Appellant argues that the Examiner errs in describing the claims at too high of a level of abstraction, untethered from the language of the claim when determining the focus of the claimed invention. Appeal Br. 5. This argument is unpersuasive because the Examiner's reasoning is not untethered from the language of the claim. Furthermore, when properly tethered to the claim language, the level of abstraction at which the Examiner describes the invention does not change the accuracy of the Examiner's determination. *Apple v. Ameranth Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016) (“An abstract idea can generally be described at different levels of abstraction.”)

Appellant argues that the present claims are directed to an improvement in computer functionality itself. Appeal Br. 6. This argument is unpersuasive because Appellant does not sufficiently demonstrate that the invention entails an improvement to receiver technology, vehicle sensors, vehicle interfaces, or vehicle displays. Rather, these additional elements appear to be generic computer components that are used to make more efficient the abstract ideas of determining driver workloads based upon contextual data representative of a vehicle's environment and presenting certain advertisements based upon what the driver workload is determined to

be. *See Alice*, 573 U.S. at 226 (determining that the claim limitations “data processing system,” “communications controller,” and “data storage unit” were generic computer components that amounted to mere instructions to implement the abstract idea on a computer); October 2019 Guidance Update at 11–12 (recitation of generic computer limitations for implementing the abstract idea “would not be sufficient to demonstrate integration of a judicial exception into a practical application”).

For these reasons, Appellant does not persuade us that claim 1 is directed to an improvement in the function of a computer or to any other technology or technical field. MPEP § 2106.05(a). Nor does Appellant persuasively demonstrate that claim 1 is directed to a particular machine or transformation, or that claim 1 adds any other meaningful limitations for the purposes of the analysis under Section 101. MPEP §§ 2106.05(b), (c), (e). Accordingly, Appellant does not persuade us that claim 1 integrates the recited abstract ideas into a practical application within the meaning of the 2019 Guidance. *See* 2019 Guidance, 84 Fed. Reg. at 52–55.

STEP 2B:

Under step 2B of the 2019 Guidance, we next analyze whether claim 1 adds any specific limitations beyond the judicial exception that, either alone or as an ordered combination, amount to more than “well-understood, routine, conventional” activity in the field. 2019 Guidance, 84 Fed. Reg. at 56; MPEP § 2106.05(d).

Appellant argues that the Examiner only considered the additional elements individually, but failed to consider the additional elements in combination. Appeal Br. 6–7; Reply Br. 2. This argument is unpersuasive. Appellant’s argument for why the additional elements teach significantly

more than the abstract idea when considered in combination effectively is because

[t]he Final Rejection fails to find an anticipatory reference that discloses each of the limitations. And as further discussed below, each of the prior art references individually and in combination fail to disclose the claimed limitations. Thus, the Applicant confirms that the claims recite aspects that are more than what is routine or conventional.

Id. at 7.

That is, Appellant is arguing the claim's patent eligibility based upon the claim's novelty. However, "[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." *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981). A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent ineligible. *See Mayo*, 566 U.S. at 90.

Appellant argues, "the Examiner's analysis falls utterly short of meeting even a reasonable attempt at analyzing the entire combination of elements as a working series of interoperating parts, by reductively choosing to refer to the whole claim as mere 'collecting/receiving data and comparing/analyzing the data.'" Reply Br. 2 (citing Ans. 8). Appellant urges, "[a]bsent such a showing, in light of *Bascom*, *Berkheimer*[,] and the two most recent memorandums, Dec 2016 and the April 2018 memorandum (which instituted new requirements), there is no choice but to conclude that the claims include the requisite something more and the Examiner must be reversed." *Id.* at 3 (citing *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), and *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018)).

This argument is unpersuasive. It is well settled that receiving, processing, and outputting data are routine and conventional steps. *E.g.*, *Intellectual Ventures I LLC v. Erie Indemnity Co.*, 850 F.3d 1315, 1329 (Fed. Cir. 2017) (“the remaining limitations recite routine computer functions, such as the sending and receiving information to execute the database search”); *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016) (“Nothing in the claims, understood in light of the specification, requires anything other than off-the-shelf, conventional computer, network, and display technology for gathering, sending, and presenting the desired information”); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2015) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive”); *Alice*, 573 U.S. at 224–26 (basic calculating, receiving, storing, sending information over networks insufficient to add an inventive concept).

Furthermore, Appellant’s Specification does not indicate that consideration of these conventional elements as an ordered combination adds any significance beyond the additional elements, as considered individually. Rather, Appellant’s Specification indicates that the invention is directed to an abstract idea that is made more efficient with generic computer components—determining when to communicate advertisements to a driver based on estimates of the driver’s workload and the driver’s responses. Spec. ¶¶ 4, 17–42, 46.

For these reasons, we determine that claim 1 does not recite additional elements that, either individually or as an ordered combination, amount to significantly more than the judicial exception within the meaning of the

2019 Guidance. 2019 Guidance, 84 Fed. Reg. at 52–55; MPEP § 2106.05(d).

Accordingly, we sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 101 as being directed to an exception to patent-eligible subject matter without reciting significantly more. We, likewise, sustain the 101 rejection of claims 2–7, 11, 12, 18, and 21–27, which Appellant does not argue separately. Appeal Br. 7.

THE SECTION 112 REJECTIONS

Claim 18

Independent claim 18 reads as follows, with the disputed term emphasized:

18. A method, comprising:

receiving an advertisement at vehicle computer system that includes a plurality of ad components;

outputting a first and second set of ad components to a vehicle display responsive to *a workload value of a driving* using contextual data received from a vehicle sensor falling below a threshold value, wherein the second set of ad components is selected from the plurality of ad components and output responsive to input from a vehicle interface.

The Examiner infers that “a workload of a driving” is not the intended language, but determines that it is not reasonably clear what term actually is intended. Final Act. 6. The Examiner acknowledges that it is most probable that claim language is intended to recite “workload value of a driver.”

Ans. 11. But the Examiner maintains that it also would be reasonable to interpret the claim alternatively to intend to recite “a workload value of a drive.” *Id.* (explaining “as in the vehicle’s drive, or the trip the vehicle is

currently undertaking, which may include route and driving condition data, such as how Appellant’s co-pending application 13/873,966 does.”).

Appellant argues

It is apparent to one of skill in the art that when in view of the other claims and specification, the claims are directed to a “workload value of a *driver*.” The Applicant is willing to amend the claims to recite “a driver” for clarification. The rejection should nonetheless be reversed, as one of skill in the art can understand this limitation when read in view of the specification and corresponding file history.

Appeal Br. 7.

The standard for definiteness under section 112(b) “mandates clarity, while recognizing that absolute precision is unattainable.” *Ex parte McAward*, Appeal No. 2015-006416, 2017 WL 3669566, *4 (PTAB Aug. 25, 2017) (precedential) (internal citations omitted). The standard set forth in *McAward* accords with opinions of the Supreme Court stating that “the certainty [that] the law requires in patents is *not greater than is reasonable*, having regard to their subject matter.” *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270 (1916).

In the present case, Appellant and the Examiner appear to agree on what the claim language actually intends to recite, and examination was even carried out based upon this interpretation. *See* Final Act. 6 (“For purposes of examination, [the disputed claim language] is interpreted as ‘. . . a workload value of a driver using contextual data. . .’”). As such, we question whether a properly filed after-final claim amendment might have mooted this indefiniteness rejection and simplified the issues on appeal. *See* 37 C.F.R. § 1.116(b)(2) (“After a final rejection or other final action . . . in an application . . . [a]n amendment presenting rejected claims in better form

for consideration on appeal may be admitted.”). However, no such after-final amendment was entered into the record, and, instead, we have been asked to address the propriety of this indefiniteness rejection. We, therefore turn to the merits.

The Examiner has set forth two plausible interpretations of what the claim may mean, and these interpretations cover different scopes of claim protection. The Board has held that language in a claim is not reasonably clear if it is “is amenable to two or more plausible claim constructions,” *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential). The Manual of Patent Examining Procedure also explains, in relation to the question of indefiniteness,

Although an essential purpose of the examination process is to determine whether or not the claims define an invention that is both novel and nonobvious over the prior art, another essential purpose of patent examination is to determine whether or not the claims are precise, clear, correct, and unambiguous. *The uncertainties of claim scope should be removed, as much as possible, during the examination process.*

MPEP 2171 (emphasis added).

In order to better ensure that claim 18 timely gets corrected so as to recite what actually is intended, then, we find it prudent to affirm the indefiniteness rejection of independent claim 18 and of claims 24–27, which depend from claim 18.

Claim 26

Dependent claim 26 recites, “[t]he method of claim 18, wherein the attribute vector data includes an age rating of the advertisement.”

The Examiner finds that neither claim 26, nor claim 18 from which claim 26 depends, affirmatively sets forth “an attribute vector data.” Final

Act. 6. The Examiner further finds, “there is no mention in the claims of ever utilizing this ‘attribute vector data,’ or what its usage is.” *Id.* Based upon these findings, the Examiner determines that claim 26 lacks sufficient antecedent basis for the claim term “the attribute vector data.” *Id.*

Appellant argues,

As stated in MPEP 2174.05(E), “the mere fact that a term or phrase used in the claim has no antecedent basis in the specification disclosure does not mean, necessarily, that the term or phrase is indefinite.” While the Applicant is willing to amend the term to “*an* attribute vector data includes,” the rejection should nonetheless be reversed, as one of skill in the art can understand the limitation in view of the specification and corresponding file history.

Appeal Br. 8.

As with independent claim 18, we find it prudent to affirm the indefiniteness rejection of claim 26 in order to better ensure that the claim language timely gets corrected so as to recite what actually is intended.

THE SECTION 103 REJECTIONS

The Rejections

Claims 1–7, 11, 12, 18, 21–25, and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Treyz (US 6,526,335 B1; issued Feb. 25, 2003), Chapin (US 2002/0069405 A1; published June 6, 2002), and Kamar (US 2010/0332315 A1; published Dec. 30, 2010). Final Act. 7–17.

Claims 26 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Treyz, Chapin, Kamar, and Official Notices. Final Act. 17.

Examiner's Determinations

The Examiner finds that Treyz teaches a vehicle computer system comprising a processor configured to “receive contextual data representative of a vehicle’s environment from one or more vehicle sensors” and “receive an input using a vehicle interface corresponding to the first set of ad components.” Final Act. 7. The Examiner finds that Treyz also “teaches a receiver configured to wirelessly receive at a vehicle a plurality of ad components for output to a user, the receiver configured to communicate the advertisement to a processor.” *Id.* The Examiner further finds that Treyz teaches “interactive advertisements, but does not specifically teach receiving a plurality of ad components identifying portions of an advertisement.” *Id.*

The Examiner finds, “Chapin discloses a computer/set-top box that performs all of the functional elements of” receiving a plurality of ad components identifying portions of an advertisement to output to a use, and communicating the advertisement to a processor, but that Chapin does not disclose performing this receiving functionality wirelessly in a vehicle. *Id.* The Examiner also determines that motivation existed “to simply combine the functionality of the computer/set-top box disclosed in Chapin with the computer in a vehicle disclosed in Treyz.” *Id.* The Examiner additionally finds that that it would have been obvious to take Chapin’s functionality and make it portable. *Id.* at 8 (citing the legal rationale set forth in MPEP § 2144.04 (Legal Precedent as Source of Supporting Rationale)).

The Examiner further finds that “Treyz does not specifically teach determin[ing] a workload value associated with a driver of a vehicle utilizing the contextual data and the one or more vehicle sensors,” but that “Kamar teaches determin[ing] a workload value associated with a driver of a vehicle

utilizing the contextual data and the one or more vehicle sensors.” *Id.* (citing Kamar ¶¶ 29, 37–41). The Examiner provides motivation for why it would have been obvious to include this functionality in the cited prior art. *Id.*

The Examiner additionally finds that while Treyz teaches outputting ad components to a vehicle display based on received input, Treyz does not teach outputting a *second* set of ad components responsive to the input, as claimed. *Id.* Similar as explained above in relation to the output of the first set of ad components, the Examiner finds that Chapin teaches this functionality in relation to the second set of ad components, but merely does not disclose the outputting specifically in the context of a vehicle display. *Id.* The Examiner determines that plural motivations, similar to those discussed above in relation to the first set of ad component, existed for combining the teachings in relation to claim 1’s last outputting step, as well. *Id.* at 9–10.

Appellant’s Contentions and Analysis

Appellant presents multiple arguments in relation to the obviousness rejection of independent claim 1. We address them *seriatim*.

Appellant first argues,

the . . . prior art fail to disclose a processor configured to “output the advertisement and a first set of ad components selected from the plurality of ad components received at the vehicle to a vehicle display based on the contextual data and the workload value, the first set of ad components including a request to interact with a user” as claim 1 requires.

Appeal Br. 8.

Appellant argues, “Kamara does not disclose that its mobile device interacts with vehicle sensors and thus does not determine a workload value utilizing the contextual data and the one or more vehicle sensors as claim 1

requires.” *Id.* at 9. According to Appellant, “Kamar[, instead,] utilizes route variability that a user may travel with their mobile device (see Kamara paragraph 29).” *Id.* at 8. Appellant continues, “[i]n fact, paragraph 30 explains the technique utilizes route history from the mobile phone or a GPS receiver of the mobile phone. *Id.* at 8–9. To summarize, Appellant argues that a mobile phone cannot reasonably be interpreted as constituting a vehicle sensor, as claimed. *Id.*

This argument is unpersuasive. As the Examiner notes, Appellant’s Specification expressly defines the claim term “vehicle sensor” as reading on, *inter alia*, a mobile phone: “The workload estimator . . . may be in communication with various vehicle sensors . . . to determine the user’s attention demand. . . Such sensors may include the windshield wipers, brake module, headlamps, navigation system, *a mobile cell phone*, or an off-board server.” Spec. 41 (emphasis added), *cited in* Ans. 15.⁴

⁴ We note for completeness that this interpretation we adopt today conflicts with the interpretation of “vehicle sensor” that the Board previously adopted in another of Appellant’s *ex parte* appeals. In *Ex parte Prakah-Anante*, 2016-008398 (PTAB Feb. 14, 2018), this Panel of the Board reversed an anticipation rejection of a claim over Kamar because we interpreted “vehicle sensors” to be limited to sensors that were permanent components of the vehicle, as opposed to reading on, more broadly, cell phones that merely are within the vehicle. *Id.* at 10 (“Kamar’s paragraph 39 discusses the use of a clock, a GPS receiver, and a weather monitoring device, but the passage does not say that any of these sensors more particularly are *vehicle* sensors.”). The Specification associated with the *Prakah-Anante* appeal, though, differs from the present Specification. *See generally* Specification of Application 13/873,966 (filed April 30, 2013). And unlike the present Specification, the ’966 Specification does not appear to define a sensor as reading on a phone. Furthermore, at the time of issuing that Decision, the Board was unaware that Appellant defines “vehicle sensor” in the broad manner set forth in the present Specification. Moreover, even if the Board

Appellant also argues that in contrast to the claims reciting “that a plurality of ad components are received at the vehicle and then the ad components are then selected based on contextual data,” . . . “Chapin does not disclose ‘output the advertisement and a first set of ad components selected from the plurality of ad components received at the vehicle.’” Appeal Br. 9. Appellant argues that “Chapin does not disclose receiving any ad components at the vehicle [or] select[ing] the first or second ad components from a plurality of ad components received at the vehicle.” *Id.* Appellant contends, “Chapin is simply directed to a television system with advertisements.” *Id.*

This argument is unpersuasive. As noted above, the Examiner acknowledges that Chapin does not disclose that that system is communicating with a vehicle, and the Examiner relies on either Treyz or Kamar for teaching a communication system for a vehicle. Final Act. 7–10. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant additionally argues that the obviousness rejection is improper because “the claimed combination would change the principal of operation of each reference that would require ‘substantial reconstruction’ to work with a vehicle computer system.” Appeal Br. 9. In support of this general argument, Appellant argues, “the Rejection utilizes Treyz (a vehicle-based system), Kamar (a mobile device based system), and Chapin (a

were aware of this difference, it is not clear whether the term “sensor” would have to be interpreted identically in the respective appeals.

television based) system to make the claimed combination.” *Id.* Appellant asserts, “Kamar’s mobile device is not configured to work with a ‘vehicle sensor’ to determine contextual data, as it simply utilizes routing data.” *Id.* According to Appellant, “[t]o make such a change in a reference’s ‘principle of operation’ is unlikely to motivate a person of ordinary skill to pursue a combination with that reference.” *Id.* (citations omitted).

This argument is unpersuasive. “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 the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). *See also In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”); and *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the *teachings* of references does not involve an ability to combine their specific structures.”). Rather, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

For these reasons, we affirm the obviousness rejection of claims 1, as well as of claims 2–7, 11, 12, 18, 21–25, and 27, which Appellant does not argue separately. 37 C.F.R. § 41.37(c)(1)(iv).

Appellant also presents separate arguments for dependent claim 26, which claim reads as follows: “The method of claim 18, wherein the attribute vector data includes an age rating of the advertisement.”

The Examiner rejects this claim over the combination of Treyz, Chapin, and Kamar, as explained above, and further in view of Official Notice of that which was well known at the time of the invention. Final Act. 17. Appellant only argues that claim 26 is allowable because the Examiner takes Official Notice, and “the Examiner has failed to show any reference or notice of ‘attribute vector data’ that includes an age rating of the advertisement.” Appeal Br. 10.

This argument is unpersuasive because taking Official Notice, by definition, entails not providing any reference in support of one or more particular facts. And here, the Examiner did set forth an explanation of what facts are being asserted as known. More specifically, the Examiner takes Official Notice “that it is old and well known in the art for an advertisement to have an age rating attribute so the advertisement can be targeted to the proper demographic.” Final Act. 17. The Examiner determines that it would have been obvious to include such attribute vector data to “help to provide more relevant advertisements to the user and provoke more user interactions with the advertisement.” *Id.*

Because Appellant does not set forth persuasive evidence or argument for why the Examiner’s taking of Official Notice is improper, we affirm the obviousness rejection of claim 26. *See* MPEP § 2144.03(C) (“To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner’s action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art.”).

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References/ Basis	Affirmed	Reversed
18, 24–27	112(b)	Indefiniteness	18, 24–27	
1–7, 11, 12, 18, 21–27	101	Eligibility	1–7, 11, 12, 18, 21–27	
1–7, 11, 12, 18, 21–25, 27	103	Treyz, Chapin, Kamar	1–7, 11, 12, 18, 21–25, 27	
26	103	Treyz, Chapin, Kamar, Official Notice	26	
Overall Outcome			1–7, 11, 12, 18, 21–27	

TIME PERIOD FOR 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED