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NSWC - CARDEROCK DIVISION
9500 MACARTHUR BLVD.
BLDG 42, SUITE 204
WEST BETHESDA, MD 20817-5700

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROSEMARIE E. YAGODA

Appeal 2017-009802
Application 13/662,137¹
Technology Center 3600

Before HUBERT C. LORIN, BIBHU R. MOHANTY, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Rosemarie E. Yagoda (Appellant) seeks our review under 35 U.S.C. § 134(a) of the Final Rejection of claims 1, 3–7, 9, 10, and 19–24. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM but denominate the affirmance as a New Ground of Rejection pursuant to 37 C.F.R. § 41.50(b).

¹ The Appellant identifies the United States of America as represented by the Secretary of the Navy as the real party in interest. App. Br. 2.

THE INVENTION

Claim 1, reproduced below with emphasis, is illustrative of the subject matter on appeal.

1. A method for evaluating the performance of an unmanned vehicle in an unmanned vehicle system, the method comprising:
 - identifying plural modes of operation of an unmanned vehicle system, said plural modes of operation including pre-launch, launch, transit, mission, recovery, and post-recovery;*
 - identifying plural capability-based performance objectives relating to said plural modes of operation of said unmanned vehicle system;*
 - identifying plural functional requirements relating to said plural modes of operation of said unmanned vehicle system;*
 - identifying plural levels of autonomy characterizing an unmanned vehicle, wherein said plural levels of autonomy include remote control, tele-operation, human directed, human aided, and autonomous;*
 - providing a first said unmanned vehicle, the first said unmanned vehicle characterized by a first said level of autonomy;*
 - providing a second said unmanned vehicle, the second said unmanned vehicle characterized by a second said level of autonomy, the second said level of autonomy differing from the first said level of autonomy;*
 - obtaining a first set of empirical data, said first set of empirical data associated with a first embodiment of said unmanned vehicle system and pertaining to said plural modes of operation of said first embodiment of said unmanned vehicle system, said first embodiment of said unmanned vehicle system including the first said unmanned vehicle, said obtaining of said first set of empirical data including conducting testing of said first embodiment of said unmanned vehicle system, said testing of said first embodiment of said unmanned vehicle system including operating the first said unmanned vehicle in each of*

said plural modes of operation of said first embodiment of said unmanned vehicle system;

obtaining a second set of empirical data, said second set of empirical data associated with a second embodiment of said mission unmanned vehicle system and pertaining to said plural modes of operation of said second embodiment of said unmanned vehicle system, said second embodiment of said unmanned vehicle system including the second said unmanned vehicle, said obtaining of said second set of empirical data including conducting testing of said second embodiment of said unmanned vehicle mission system, said testing of said second embodiment of said unmanned vehicle system including operating the second said unmanned vehicle in each of said plural modes of operation of said second embodiment of said unmanned vehicle system;

analyzing said first set of empirical data;

analyzing said second set of empirical data;

wherein if, in accordance with said analyzing of said first set of empirical data and said analyzing of said second set of empirical data, said plural capability-based performance objectives and said plural functional requirements are not met by at least one of said first embodiment of said unmanned vehicle system and said second embodiment of said unmanned vehicle system, then the method for evaluating the performance of an unmanned vehicle in an unmanned vehicle system further comprises repeating, at least once:

said providing of the first said unmanned vehicle;

said providing of the second said unmanned vehicle;

said obtaining of said first set of empirical data;

said obtaining of said second set of empirical data;

said analyzing of said first set of empirical data;

said analyzing of said second set of empirical data.

THE REJECTION

The following rejection is before us for review:

Claims 1, 3–7, 9, 10, and 19–24 are rejected under 35 U.S.C. § 101 for claiming patent-ineligible subject matter.

ISSUE

Did the Examiner err in rejecting claims 1, 3–7, 9, 10, and 19–24 under 35 U.S.C. § 101 for claiming patent-ineligible subject matter?

ANALYSIS

The rejection of claims 1, 3–7, 9, 10, and 19–24 under 35 U.S.C. § 101 for claiming patent-ineligible subject matter.

Representative claim

The Appellant argued these claims as a group. App. Br. 8–17. We select claim 1 (reproduced above) as the representative claim for this group, and the remaining claims 3–7, 9, 10, and 19–24 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv) (2016).

Preliminary comment

The Examiner cites prior USPTO Guidance. *See e.g.*, Ans. 15 (“USPTO’s SME guideline”). However, said guidance has been superseded by the 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (hereinafter “2019 Revised 101 Guidance”). 2019 Revised 101 Guidance, 84 Fed. Reg. at 51 (“Eligibility-related guidance issued prior to the Ninth Edition, R–08.2017, of the MPEP (published Jan. 2018) should not be relied upon.”). Accordingly, our analysis will not

address the sufficiency of the Examiner’s rejection against prior guidance. Rather, our analysis will comport with the 2019 Revised 101 Guidance.

Introduction

35 U.S.C. § 101 provides that “[w]hoever 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.”

In that regard, claim 1 covers a “process” and is, thus, statutory subject matter for which a patent may be obtained.² This is not in dispute.

Nevertheless, the § 101 provision “. . . contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

In that regard, notwithstanding claim 1 covers statutory subject matter, the Examiner has raised a question of patent-eligibility on the ground that claim 1 is directed to an abstract idea. Eligibility is a question of law based on underlying facts. *SAP Am., Inc. v. Investpic, LLC*, 890 F.3d 1016, 1020 (Fed. Cir. 2018).

Alice identifies a two-step framework for determining whether claimed subject matter is directed to an abstract idea. *Alice*, 573 U.S. at 217.

² This corresponds to Step 1 of the 2019 Revised 101 Guidance which requires determining whether a “claim is to a statutory category.” 2019 Revised 101 Guidance, 84 Fed. Reg. at 53; *see also id.* at 53–54 (“[C]onsider[] whether the claimed subject matter falls within the four statutory categories of patentable subject matter identified by 35 U.S.C. [§] 101 . . .”).

Alice step one – the “directed to” inquiry

According to *Alice* step one, “[w]e must first determine whether the claims at issue are *directed to* a patent-ineligible concept.” *Id.* at 218 (emphasis added).

The Examiner determined that claim 1 is “directed to the abstract idea of configuring the allocation of functions between humans and robots in their interactions.” Final Act. 3. The Examiner also indicates that the claim includes “additional computer elements, which are recited at a high level of generality, provid[ing] conventional computer functions that do not add meaningful limits to practicing the abstract idea.” *Id.*

The Appellant contends that

Applicant’s claimed invention is directed to a specific regime of performance and empirical analysis of physical acts to attain technological benefits.

Applicant’s claimed invention defines **testing** of unmanned vehicles.

App. Br. 9.

Accordingly, there is a dispute over what claim 1 is directed to. Is it directed to “configuring the allocation of functions between humans and robots in their interactions” (Final Act. 3) or “**testing** of unmanned vehicles” (App. Br. 9)?

*Claim Construction*³

³ “[T]he important inquiry for a § 101 analysis is to look to the claim.” *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013). “In *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*

We consider the claim as a whole⁴ giving it the broadest reasonable construction⁵ as one of ordinary skill in the art would have interpreted it in light of the Specification⁶ at the time of filing.

Claim 1 calls for a “method for evaluating the performance of an unmanned vehicle in an unmanned vehicle system.”

1. A method for evaluating the performance of an unmanned vehicle in an unmanned vehicle system, the method comprising:

identifying [X0];

identifying [information A];

identifying [information B];

identifying [information C];

providing [X1] . . . characterized by [information C1];

providing [X2] . . . characterized by [information C2],
[information C2] differing from [information C1];

of Can., 687 F.3d 1266, 1273 (Fed.Cir.2012), the court observed that ‘claim construction is not an inviolable prerequisite to a validity determination under § 101.’ However, the threshold of § 101 must be crossed; an event often dependent on the scope and meaning of the claims.” *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1347–48 (Fed. Cir. 2015).

⁴ “In determining the eligibility of respondents’ claimed process for patent protection under § 101, their claims must be considered as a whole.” *Diamond v. Diehr*, 450 U.S. 175, 188 (1981).

⁵ 2019 Revised 101 Guidance, 84 Fed. Reg. at 52 n.14 (If a claim, “*under its broadest reasonable interpretation . . .*” (emphasis added)).

⁶ “First, it is always important to look at the actual language of the claims Second, in considering the roles played by individual limitations, it is important to read the claims ‘in light of the specification.’” *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1378 (Fed. Cir. 2017) (J. Linn, dissenting-in-part and concurring-in-part), citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016), among others.

obtaining [information D1], said [information D1] associated with a first embodiment of said unmanned vehicle system and pertaining to said [X0] of said first embodiment of said unmanned vehicle system, said first embodiment of said unmanned vehicle system including [X1], said obtaining of [information D1] including conducting testing of said first embodiment of said unmanned vehicle system, said testing of said first embodiment of said unmanned vehicle system including operating [X1] in each of said [X0] of said first embodiment of said unmanned vehicle system;

obtaining [information D2], said [information D2] associated with a second embodiment of said mission unmanned vehicle system and pertaining to said [X0] said second embodiment of said unmanned vehicle system, said second embodiment of said unmanned vehicle system including [X2], said obtaining of [information D2] including conducting testing of said second embodiment of said unmanned vehicle mission system, said testing of said second embodiment of said unmanned vehicle system including operating [X2] in each of said [X0] of said second embodiment of said unmanned vehicle system;

analyzing [information D1];

analyzing [information D2];

wherein if, in accordance with said analyzing of [information D1] and said analyzing of [information D2], said [information A] and said [information B] are not met by at least one of said first embodiment of said unmanned vehicle system and said second embodiment of said unmanned vehicle system, then the method for evaluating the performance of an unmanned vehicle in an unmanned vehicle system further comprises repeating, at least once:

said providing of [X1];

said providing of [X2];

said obtaining of said [information D1];

said obtaining of said [information D2];

said analyzing of said [information D1];
said analyzing of said [information D2].

Claim 1, where

X0 is “plural modes of operation of an unmanned vehicle system, said plural modes of operation including pre-launch, launch, transit, mission, recovery, and post-recovery”;

X1 = “a first said unmanned vehicle”

X2 = “a second unmanned vehicle”

Information A is “plural capability-based performance objectives relating to said plural modes of operation of said unmanned vehicle system”;

Information B is “plural functional requirements relating to said plural modes of operation of said unmanned vehicle system”;

Information C is “plural levels of autonomy characterizing an unmanned vehicle, wherein said plural levels of autonomy include remote control, tele-operation, human directed, human aided, and autonomous”;

Information C1 is “a first said level of autonomy” taken from those listed in C;

Information C2 is “a second said level of autonomy” taken from those listed in C;

Information D1 is “a first set of empirical data”; and,

Information D2 is “a second set of empirical data.”

Claim 1 recites four “identifying” steps, two “providing” steps, two “obtaining” steps, and two “analyzing steps,” followed by at least one repeat of the two “providing” steps, two “obtaining” steps, and two “analyzing” steps — if a certain condition occurs.

Notably, the “identifying” and “analyzing” steps are not tied to any device. They could be performed purely mentally.

Regarding the “providing” steps, they call for “providing” first and second unmanned vehicles having differing levels of autonomy, *e.g.*, from among “remote control, tele-operation, human directed, human aided, and autonomous” (claim 1). The vehicles themselves are known. *See* Spec. para. 2. The claim gives no further details about how these vehicles are to be “provid[ed].” Since “providing” a vehicle could be accomplished by hand, the claim reasonably broadly covers doing it that way.

The “obtaining” steps gather certain types of information about embodiments of systems of the first and second unmanned vehicles. The “obtaining” steps include “conducting testing” and the “testing” “includ[es] operating” the vehicles “in each of [a] plural modes of operation” (*i.e.*, “including pre-launch, launch, transit, mission, recovery, and post-recovery”).

Finally, if based on the obtained information,
plural capability-based performance objectives[, *i.e.*,
Information A,] and . . . plural functional requirements[, *i.e.*,
Information B,] are not met by at least one of said first
embodiment of said unmanned vehicle system and said second
embodiment of said unmanned vehicle system, then the method
for evaluating the performance of an unmanned vehicle in an
unmanned vehicle system [is repeated].

This last step is a comparing step.

Putting it together, the claimed method describes obtaining certain empirical data about two embodiments of unmanned vehicle systems and if the data does not satisfy certain objectives and requirements, obtain the data

again. This is what we reasonably broadly construe claim 1 as being directed to.

*The Abstract Idea*⁷

Above, where we reproduce claim 1, we identify in italics the limitations we believe recite an abstract idea.⁸ Based on our claim construction analysis (above), we determine that said claim limitations are directed to obtaining certain empirical data about two embodiments of unmanned vehicle systems and if the data does not satisfy certain objectives and requirements, obtain the data again.

In our view “obtaining” is a concept that can be performed in the human mind. We are cognizant of the fact that the claim recites that said “obtaining” “*includ[es]* conducting testing,” and that the testing “*includ[es]* operating . . . [an] unmanned vehicle in each of said plural modes of operation of [the respective embodiment].” Emphasis added. But the claim does not expressly tie the obtaining of the empirical data to operating of the unmanned vehicle. As long as operating of the unmanned vehicle through each of the plural modes of operation is included, the “obtaining” of

⁷ This corresponds to Step 2A of the 2019 Revised 101 Guidance. Step 2A determines “whether a claim is ‘directed to’ a judicial exception,” such as an abstract idea. 2019 Revised 101 Guidance, 84 Fed. Reg. at 53. Step 2A is two prong inquiry.

⁸ This corresponds to Prong One (a) of Step 2A of the 2019 Revised 101 Guidance. “To determine whether a claim recites an abstract idea in Prong One, examiners are now to: (a) Identify the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea” 2019 Revised 101 Guidance, 84 Fed. Reg. at 54.

empirical data can still be performed purely mentally. The operating of the unmanned vehicle through each of the plural modes of operation does not affect the character of the “obtaining” of data as a mental process. Both individually and in combination with the “identifying,” “providing,” and “analyzing,” steps, followed by at least one repeat of two “providing,” two “obtaining,” and two “analyzing” steps — if a certain condition occurs, the subject matter to which the claim is directed to falls within the enumerated “Mental processes” grouping of abstract ideas set forth in the 2019 Revised 101 Guidance.

*Improvement to other technology or technical field*⁹ (*Appellant’s Argument*)

The Examiner’s characterization of what the claim is directed to (“configuring the allocation of functions between humans and robots in their interactions” (Final Act. 3)) is incorrect. There is nothing in the claim about configuring the allocation of functions between humans and robots in their interactions. The Examiner’s further point about “additional computer

⁹ This corresponds to Prong Two (“If the Claim Recites a Judicial Exception, Evaluate Whether the Judicial Exception Is Integrated Into a Practical Application”) of Step 2A of the 2019 Revised 101 Guidance. 2019 Revised 101 Guidance, 84 Fed. Reg. at 54. “A claim that integrates a judicial exception into a practical application will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *Id.* One consideration, implicated here, that is “indicative that an additional element (or combination of elements)¹¹ may have integrated the exception into a practical application” (*id.* at 55) is if “[a]n additional element reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field” (*id.*).

elements, which are recited at a high level of generality” (*id.*) is also incorrect. There is no computer mentioned in the claim.

The Appellant argues that the claimed subject matter “defines **testing** of unmanned vehicles.” App. Br. 9. That is somewhat true. But testing alone is not patent-eligible.

Appellant further argues that “Applicant’s claimed invention is directed to a specific regime of performance and empirical analysis of physical acts *to attain technological benefits.*” *Id.* (emphasis added). But we see no technological benefits recited in or suggested by the claim. The regime as it is currently worded in the claim simply sets forth a combination of identifying, providing, obtaining, and analyzing steps that are unattached to any device for performing them. The individual steps and their combination as claimed could be performed purely mentally.

It is true that specific asserted improvements in technology, when claimed, can render claimed subject matter not directed to an abstract idea. *Cf. McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1316 (Fed. Cir. 2016) (“When looked at as a whole, claim 1 is directed to a patentable, technological improvement over the existing, manual 3–D animation techniques.”). However, there is insufficient evidence in the record before us that the claimed subject matter reflects any specific asserted improvement in technology.

“The ‘abstract idea’ step of the inquiry calls upon us to look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257–58 (Fed. Cir. 2016)

(quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)); see also *Enfish*, 822 F.3d at 1335; see also *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1347 (Fed. Cir. 2018) (“We examine the patent’s ‘claimed advance’ to determine whether the claims are directed to an abstract idea.”) (quoting *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1303 (Fed. Cir. 2018)). “In cases involving software innovations, this inquiry often turns on whether the claims focus on ‘the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an “abstract idea” for which computers are invoked merely as a tool.’” *Id.* (quoting *Finjan*, 879 F.3d at 1303); see *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1285–86 (Fed. Cir. 2018). Computers are improved not only through changes in hardware; “[s]oftware can make non-abstract improvements to computer technology” *Enfish*, 822 F.3d at 1335; see *Finjan*, 879 F.3d at 1304 (“We have several times held claims to pass muster under *Alice* step one when sufficiently focused on such improvements.”)

The Specification’s description of the problem and solution shows the advance over the prior art by the claimed invention is in “provid[ing] an improved methodology for allocating functions between human beings and robotic platforms in unmanned systems.” Spec. para. 7. “[T]here is a need for a systematic approach to determining appropriate levels of autonomy in unmanned systems. Of great benefit would be a process designed to guide the development, configuration, and implementation of human-robot systems.” *Id.* at para. 6. But the claim is not so limited. Nothing in the claim calls for, for example, human-robot systems. While application of the

claimed process to human-robot systems may be an improvement in the technical field and thereby integrate the claimed process into a practical application, the claim does not presently reflect that improvement.

Accordingly, within the meaning of the 2019 Revised 101 Guidance, we find there is no integration into a practical application.

We have considered all of the Appellant’s arguments challenging the Examiner’s determination under step one of the *Alice* framework and find them unpersuasive. For the foregoing reasons, the record supports the Examiner’s determination that claim 1 is directed to an abstract idea; that is, the mental process of obtaining certain empirical data about two embodiments of unmanned vehicle systems and if the data does not satisfy certain objectives and requirements, obtain the data again.

*Alice step two – Does the Claim Provide an Inventive Concept?*¹⁰

Step two is “a search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice*, 573 U.S. at 217–18 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73 (2012)).

¹⁰ This corresponds to Step 2B of the 2019 Revised 101 Guidance page 56 (“[I]f a claim has been determined to be directed to a judicial exception under revised Step 2A, examiners should then evaluate the additional elements individually and in combination under Step 2B to determine whether they provide an inventive concept (*i.e.*, whether the additional elements amount to significantly more than the exception itself).”).

In that regard, the Examiner determined that the “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.” Final Act. 3. As we stated, there is no computer recited in the claim. Accordingly, the Examiner’s determination under step two of the *Alice* analysis is flawed.

The Appellant argues that

According to the traditional machine-or-transformation test, a claimed method/process is patent-eligible if it: (i) is implemented by a particular machine in a non-conventional and non-trivial manner; or, (ii) transforms an article from one state to another. The *Alice* decision instructs that, while the machine-or-transformation test is not dispositive of a patent-eligibility question, it is nonetheless an important factor to be considered. Applicant’s claimed [subject matter] recites two unmanned vehicles respectively characterized by two different levels of autonomy. The two unmanned vehicles implementation [sic, implement] the rules and steps of the inventive method in a non-conventional and non-trivial manner. Furthermore, the difference in terms of autonomy level between Applicant’s two unmanned vehicles represents a transformation of an article from one state to another.

App. Br. 13.

We are unpersuaded by this argument. We do not see any particular machine implemented in a nonconventional manner. Nor do we see any transformation. The unmanned vehicles themselves are known — including at different levels of autonomy, as the Specification discloses. The method as claimed does not transform them. They are simply provided.

The method seeks to obtain certain data about them. Presently, the claim does not reflect what happens to the system of the unmanned vehicles once the data has been obtained. *Cf. In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 612 (Fed. Cir. 2016) (“Put differently, the telephone unit itself is merely a conduit for the abstract idea of classifying an image and storing the image based on its classification. Indeed, the specification notes that it ‘is known’ that ‘cellular telephones may be utilized for image transmission,’ *id.* at col. 1 ll. 31–34, and existing telephone systems could transmit pictures, audio, and motion pictures and also had ‘graphical annotation capability,’ *id.* at col. 1 ll. 52–59.”).

The Appellant also argues that

Applicant’s claimed invention is directed to the **testing of differently configured unmanned vehicles** while applying **enumerated technical standards and criteria**. Applicant’s claimed invention is patent-eligible because it represents significantly more than mental steps, as it combines **rules** with **test operation of alternative configurations**, in terms of level of autonomy, of an unmanned vehicle.

App. Br. 14. The difficulty with this argument is that it is not commensurate in scope with what is claimed. The method does not “apply[] **enumerated technical standards and criteria**.” According to the claim, empirical data is obtained and compared to “plural capability-based performance objectives[, i.e., Information B,] and . . . plural functional requirements[, i.e., Information C].” No technical standard/criteria is applied. The claim simply obtains data, compares to unspecified objectives and requirements, and if the data does not meet them, more data is obtained.

The Appellant cites various Board decisions (App. Br. 10–12) but we do not address them as they are not binding.

The Appellant also cites *McRO*. App. Br. 12–15. We have already acknowledged that *McRO* indicates that specific asserted improvements in technology, when claimed, can render claimed subject matter not directed to an abstract idea. *See McRO*, 837 F.3d at 1313 (“[T]he claimed improvement here is allowing computers to produce ‘accurate and realistic lip synchronization and facial expressions in animated characters’ that previously could only be produced by human animators.”) (emphasis added). *See also BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1351 (Fed. Cir. 2016) (“[T]he claims may be read to ‘improve[] an existing technological process.’”) (emphasis added; citation omitted). Here, however, there is insufficient evidence in the record before us that the claimed subject matter reflects any specific asserted improvement in technology. Rather than being directed to any specific asserted improvement in technology, the record supports the view that the claimed subject matter is directed to a mental process; that is, obtaining certain empirical data about two embodiments of unmanned vehicle systems and if the data does not satisfy certain objectives and requirements, obtain the data again. The difficulty here is that, notwithstanding certain improvements in technology set forth in the record, the subject matter as claimed does not reflect them.

Above, we noted that specific asserted improvements in technology can turn claimed subject matter away from being directed to an abstract under step one of the *Alice* framework. This is consistent with the case law.

See Ancora, 908 F.3d at 1347 (“We have several times held claims to pass muster under *Alice* step one when sufficiently focused on such improvements.”). Such an argument, as the Appellant has done here, can also challenge a determination under step two of the *Alice* framework. *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1354–55 (Fed. Cir. 2014). “[R]ecent Federal Circuit jurisprudence has indicated that eligible subject matter can often be identified either at the first or the second step of the *Alice/Mayo* [framework].” 2019 Revised 101 Guidance, 84 Fed. Reg. at 53; *see also id.* at n.17.

Be that as it may, we are unpersuaded that claim 1 as currently drafted presents an element or combination of elements indicative of a specific asserted improvement in technology, thereby rendering the claimed subject matter sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the abstract idea itself.

Finally, as to the question of preemption, the Appellant argues that “[t]he Court [in *McRO*] noted that it was concerned with **preemption** rather than **tangibility**, and suggested that an invention may be patent-eligible regardless of whether it passes the machine-or-transformation test.” App. Br. 16.

The difficulty with this argument is that it confuses the preemption concern with the level of abstraction describing the abstract idea. With respect to the pre-emption concern, “[w]hat matters is whether a claim threatens to subsume the full scope of a fundamental concept, and when those concerns arise, we must look for meaningful limitations that prevent the claim as a whole from covering the concept’s every practical

application.” *CLS Bank Int’l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1281 (Fed. Cir. 2013) (Lourie, J., concurring). Pre-emption is not a separate test.

To be clear, the proper focus is not preemption *per se*, for some measure of preemption is intrinsic in the statutory right granted with every patent to exclude competitors, for a limited time, from practicing the claimed invention. *See* 35 U.S.C. § 154. Rather, the animating concern is that claims should not be coextensive with a natural law, natural phenomenon, or abstract idea; a patent-eligible claim must include one or more substantive limitations that, in the words of the Supreme Court, add “significantly more” to the basic principle, with the result that the claim covers significantly less. *See Mayo* 132 S. Ct. at 1294. Thus, broad claims do not necessarily raise § 101 preemption concerns, and seemingly narrower claims are not necessarily exempt.

Id. *See also Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (“[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.”). Because we find the claimed subject matter covers patent-ineligible subject matter, the pre-emption concern is necessarily addressed. “Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, . . . preemption concerns are fully addressed and made moot.”

No other persuasive arguments having been presented, we conclude that no error has been committed in the determination under *Alice* step two that claim 1 does not include an element or combination of elements circumscribing the patent-ineligible concept it is directed to so as to transform the concept into an inventive application.

We have considered all of the Appellant's remaining arguments (including those made in the Reply Brief) and find them unpersuasive.

Accordingly, because we are not persuaded as to error in the determination that representative claim 1, and claims 3–7, 9, 10, and 19–24, which stand or fall with claim 1, are directed to an abstract idea and do not present an “inventive concept,” we sustain the Examiner's conclusion that they are directed to patent-ineligible subject matter for being judicially-excepted from 35 U.S.C. § 101. *Cf. LendingTree, LLC v. Zillow, Inc.*, 656 F. App'x 991, 997 (Fed. Cir. 2016) (“We have considered all of LendingTree's remaining arguments and have found them unpersuasive. Accordingly, because the asserted claims of the patents in suit are directed to an abstract idea and do not present an ‘inventive concept,’ we hold that they are directed to ineligible subject matter under 35 U.S.C. § 101.”); *see, e.g., OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1364 (Fed. Cir. 2015); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016).

Given our characterization of the abstract idea to which claim 1 is directed and that it is substantially different from the one the Examiner articulated, we denominate our affirmance as a new ground of rejection.

DECISION

The decision of the Examiner to reject claims 1, 3–7, 9, 10, and 19–24 is affirmed. We denominate the affirmance as a new ground of rejection.

NEW GROUNDS

This Decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.” 37 C.F.R. § 41.50(b) also provides that the Appellant, **WITHIN TWO MONTHS FROM THE DATE OF THE DECISION:**

must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner

(2) *Request rehearing.* Request that the proceeding be reheard under §41.52 by the Board upon the same Record

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

AFFIRMED; 37 C.F.R. § 41.50(b)