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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* VINCENT BARILLEC and ANTHONY DEBARGE

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Appeal 2017-003531  
Application 12/661,527<sup>1</sup>  
Technology Center 3600

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Before JOSEPH A. FISCHETTI, BIBHU R. MOHANTY, and  
BART A. GERSTENBLITH, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1–8, 13–20, 22–25, 27, and 28. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

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<sup>1</sup> Appellants identify Amadeus S.A.S. as the real party in interest. Appeal Br. 3.

## THE INVENTION

Appellants claim a customer seating system for allocating seats to a group of customers using a computer system (Spec. 1:1–2).

Claim 1, reproduced below, is representative of the subject matter on appeal.

1. An automated customer seating system for allocating seats to a group of customers, the customer seating system comprising:
  - a memory storing a database, said database comprising a plurality of sets of predetermined geometric shapes, wherein each of the sets of predetermined geometric shapes corresponds to a different number of customers, and each of the predetermined geometric shapes corresponds to a different arrangement of seats;
  - a processor; and
  - a computer program stored in a non-transitory computer-readable medium, wherein execution of the computer program by the processor causes the system to:
    - for each available seat of a plurality of availability seats:
      - calculate a plurality of customer satisfaction values for the respective available seat, each of the customer satisfaction values calculated for the respective available seat being for a different customer of a first group of customers, and
      - compute a global satisfaction value for the respective available seat, said global satisfaction value for the respective available seat being the sum of the customer satisfaction values calculated for the respective available seat,
      - select a particular geometric shape from the set of predetermined geometric shapes that is stored in the database and that corresponds to the number of customers in the first group of customers based at least in part on the number of customers in the first group of customers,
      - identify one or more groups of seats that are included in the available seats and that match the arrangement of seats corresponding to the particular geometric shape,
      - for each of the one or more identified groups of seats, compute an average global satisfaction value based on the global

satisfaction value computed for each of the seats of the respective identified group of seats,

select the group of seats of the one or more identified groups of seats that corresponds to a maximum average global satisfaction value, and

assign the seats of the selected group of seats to the first group of customers.

#### THE REJECTION

The following rejection is before us for review.

Claims 1–8, 13–20, 22–25, 27, and 28 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

#### ANALYSIS

##### 35 U.S.C. § 101 REJECTION

We will sustain the rejection of claims 1–8, 13–20, 22–25, 27, and 28 under 35 U.S.C. § 101.

The Supreme Court

set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts . . . . If so, we then ask, “[w]hat else is there in the claims before us?” . . . To answer that question, . . . consider the elements of each claim both individually and “as an ordered combination” to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application. . . . [The Court] described step two of this analysis as 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 Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72–73 (2012)).

To perform this test, we must first determine whether the claims at issue are directed to a patent-ineligible concept.

Although the Court in *Alice* made a direct finding as to what the claims were directed to, we determine that this case’s claims themselves and the Specification provide enough information to inform one as to what they are directed to.

The steps in claim 1 result in:

for each of the one or more identified groups of seats, compute an average global satisfaction value based on the global satisfaction value computed for each of the seats of the respective identified group of seats,

select the group of seats of the one or more identified groups of seats that corresponds to a maximum average global satisfaction value, and

assign the seats of the selected group of seats to the first group of customers.

The Examiner found that the claims are directed to an abstract idea of assigning seats to customers. (Final Act. 2). The Examiner further found that assigning seats falls into the categories of “(ii) a method of organizing human activities, [and] (iii) an idea of itself.” *Id.* The Specification states:

There is therefore a need to provide an automated computerized system that is configured to allocate seats for groups of costumers, while taking their preferences as individuals and as a group into account, and further while respecting the requirements such as weight distribution of the specific aircraft.

Spec. 2:6–9. The Specification describes:

For each rule to be respected, a value is determined as a function of the correspondence to the placement criteria for a given passenger in each seat. Each seat will then have a passenger satisfaction value for each rule. These values are added together for each seat and a global mark representing available seats with all rules taken into account is provided. The highest value is translated to the best seat to assign to that given passenger.

Spec. 6:21–27. Thus, all this evidence shows that claim 1 is directed to calculating a maximum average global satisfaction value used to assign the seats of allocated seats to a group of customers. It follows from prior Supreme Court cases, and *Gottschalk v. Benson*, 409 U.S. 63 (1972), in particular, that the claims at issue here are directed to an abstract idea. Calculating a maximum average global satisfaction value used to assign the seats of allocated seats to a group of customers is a method of organizing human behavior, because it controls where a person sits him or herself in a given seating arrangement. The patent-ineligible end of the 35 U.S.C. § 101 spectrum includes methods of organizing human activities. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2355–56.

Also, we find the steps of:

- i. “calculat[ing] a plurality of customer satisfaction values for the respective available seat, each of the customer satisfaction values calculated for the respective available seat being for a different customer of a first group of customers,”
- ii. “comput[ing] a global satisfaction value for the respective available seat, said global satisfaction value for the respective available seat being the sum of the customer satisfaction values calculated for the respective available seat,” and

iii. “select[ing] a particular geometric shape from the set of predetermined geometric shapes that is stored in the database and that corresponds to the number of customers in the first group of customers based at least in part on the number of customers in the first group of customers”,  
constitute “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016); *see also buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (claims directed to certain arrangements involving contractual relations are directed to abstract ideas). Thus, calculating a maximum average global satisfaction value used to assign the seats of allocated seats to a group of customers is an “abstract idea” beyond the scope of § 101.

As in *Alice Corp. Pty. Ltd.*, we need not labor to delimit the precise contours of the “abstract ideas” category in this case. It is enough to recognize that there is no meaningful distinction in the level of abstraction between the concept of an intermediated settlement in *Alice* and the concept of calculating a maximum average global satisfaction value used to assign the seats of allocated seats to a group of customers, at issue here. Both are squarely within the realm of “abstract ideas” as the Court has used that term. That the claims do not preempt all forms of the abstraction or may be limited to airline seating, does not make them any less abstract. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1360–61 (Fed. Cir. 2015).

Claim 1, unlike the claims found non-abstract in prior cases, uses generic computer technology to perform data reception, transmission, and

linkage and does not recite an improvement to a particular computer technology. *See, e.g., McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016) (finding claims not abstract because they “focused on a specific asserted improvement in computer animation”).

The introduction of a computer into the claims does not alter the analysis at *Mayo* step two.

[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea “while adding the words ‘apply it’” is not enough for patent eligibility. Nor is limiting the use of an abstract idea “to a particular technological environment.” Stating an abstract idea while adding the words “apply it with a computer” simply combines those two steps, with the same deficient result. Thus, if a patent’s recitation of a computer amounts to a mere instruction to “implemen[t]” an abstract idea “on . . . a computer,” that addition cannot impart patent eligibility. This conclusion accords with the preemption concern that undergirds our § 101 jurisprudence. Given the ubiquity of computers, wholly generic computer implementation is not generally the sort of “additional featur[e]” that provides any “practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself.”

*Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2358 (alterations in original) (internal citations omitted).

“[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Id.* at 2359. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer to retrieve, select, and apply decision criteria to data and modify the data as a result amounts to electronic data query and retrieval—one of

the most basic functions of a computer. All of these computer functions are well-understood, routine, conventional activities previously known to the industry. *See Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1354; *see also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ . . . those functions can be achieved by any general purpose computer without special programming”). In short, each step does no more than require a generic computer to perform generic computer functions. As to the data operated upon, “even if a process of collecting and analyzing information is ‘limited to particular content’ or a particular ‘source,’ that limitation does not make the collection and analysis other than abstract.” *SAP Am. Inc. v. InvestPic, LLC*, 890 F.3d 1016, 1022 (Fed. Cir. 2018) (internal citation omitted).

Considered as an ordered combination, the computer components of Appellants’ method add nothing that is not already present when the steps are considered separately. The sequence of data reception-analysis-access/display is equally generic and conventional or otherwise held to be abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction), *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (sequence of data retrieval, analysis, modification, generation, display, and transmission), *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (sequence of processing, routing, controlling, and monitoring). The ordering of the steps is, therefore, ordinary and conventional.

The method claims do not, for example, purport to improve the functioning of the computer itself. Nor do they effect an improvement in any other technology or technical field. The Specification spells out different generic equipment and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of information access under different scenarios. *See, e.g.*, Spec. 5:10–16. The Specification does not describe any particular improvement in the manner a computer functions, at least with respect to the claims in the instant application. Instead, the claims at issue amount to nothing significantly more than instructions to apply the abstract idea of information access using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2360.

As to the system claims, they

are no different from the method claims in substance. The method claims recite the abstract idea implemented on a generic computer; the system claims recite a handful of generic computer components configured to implement the same idea. This Court has long “warn[ed] . . . against” interpreting § 101 “in ways that make patent eligibility ‘depend simply on the draftsman’s art.’”

*Id.* (alterations in original).

We have reviewed all the arguments (Appeal Br. 7–22) Appellants have submitted concerning the patent eligibility of the claims before us that stand rejected under 35 U.S.C. § 101. We find that our analysis above substantially covers the substance of all the arguments, which have been made. But, for purposes of completeness, we will address various arguments in order to make individual rebuttals of same.

Appellants argue:

In this case, the Examiner initially asserted that the pending claims were directed to the abstract idea of “assigning seats to customers and a method of organizing human activities” in the Office Action dated September 12, 2014. *See* Office Action dated 9-12-2014, pg. 3. This assertion was entirely conclusory, as the Examiner failed to provide any explanation for the assertion.

Appeal Br. 9.

We disagree with Appellants. In rejecting the pending claims under § 101, the Examiner analyzed the claims using the *Mayo/Alice* two-step framework, consistent with the guidance set forth in the USPTO’s 2014 INTERIM GUIDANCE ON PATENT SUBJECT MATTER ELIGIBILITY. *See* Final Act. 4–5. Specifically, the Examiner notified Appellants that the claims are broadly directed to “assigning seats to customers.” *Id.* at 4. The Examiner determined that the concept is “(ii) a method of organizing human activities, [and] (iii) an idea of itself.” *Id.* Turning to step two, the Examiner determined “[t]he additional elements or combination of elements in the claims other than the abstract idea per se amounts to no more than the recitation of generic computer structure that serves to perform generic computer functions that are well-understood.” *Id.* at 5.

Appellants further argue,

Such a vague definition of the alleged abstract idea fails to give Appellant sufficient notice of the reasons of ineligibility so as to enable Appellant to respond, resulting in a burden of proving that the present claims are not directed to any abstract idea being unduly placed on Appellant. *See In re Oetiker*, 977 F.2d 1433, 1445 (Fed. Cir. 1992) (“If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent”); *see also* MPEP 707.07(d) (“The burden is on the Office to establish any prima facie case of unpatentability . . . , thus

the reasoning behind any rejection must be clearly articulated”).

Appeal Br. 10.

We disagree with Appellants. All that is required of the Office to meet its *prima facie* burden of production is that the Examiner set forth the statutory basis of the rejection and the reference or references relied upon in a sufficiently articulate and informative manner as to meet the notice requirement of 35 U.S.C. § 132. As the statute itself instructs, the examiner must “notify the applicant,” “stating the reasons for such rejection,” “together with such information and references as may be useful in judging the propriety of continuing prosecution of his application.” 35 U.S.C. § 132; *see In re Jung*, 637 F.3d 1356, 1363 (Fed. Cir. 2011). Here, as we found above, the Examiner has made these findings as required by the statute. *See* Final Act. 4–5.

Appellants argue, “if an abstract idea to which claims are directed includes not just the abstract idea in general but also ‘the specific type of way [the abstract idea is claimed] in each claim’, then practically every claim directed to an abstract idea would not include ‘significantly more.’” (Appeal Br. 10).

We disagree with Appellants. The specific way an abstract idea is claimed does not make abstraction any less abstract because a claim for a new abstract idea is still an abstract idea. *See Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (citing *Mayo*, 566 U.S. at 90).

Appellants argue, “[i]f, as the Examiner suggests, an identified abstract idea includes the specific way in which the abstract idea is performed in the claim in addition to the abstract idea in general, then the

claim in *Bascom* could not have been found to be ‘significantly more’ than the alleged abstract idea.” (Appeal Br. 10–11).

We disagree with Appellants. In *Bascom* the Court found that:

the claims of the ‘606 patent are directed to the abstract idea of filtering content, BASCOM has adequately alleged that the claims pass step two of *Alice*’s two-part framework. BASCOM has alleged that an inventive concept can be found in the ordered combination of claim limitations that transform the abstract idea of filtering content into a particular, practical application of that abstract idea.

*Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016). To the contrary, as we found *supra*, nothing in the claims before us passes step two of the *Alice* two-part test; namely, we found that when considered as an ordered combination, the computer components of Appellants’ claims add nothing that is not already present when the steps are considered separately.

Appellants argue, “Similar to the claims in *Enfish*, the Examiner’s assertion that the present claims are merely directed to ‘assigning seats to customers’ amounts to a description that is untethered from the language of the claims.” (Appeal Br. 12).

We disagree with Appellants. The court in *Enfish* framed the question as “whether the focus of the claims is on [a] 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.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–1336 (Fed. Cir. 2016). Here, as found *supra*, we find nothing in the claims that is directed to an improvement in computer capabilities.

Appellants further argue,

As an initial matter, the present claims are completely unrelated to the conscious thoughts of a physician, and for this reason alone should not be found to be directed to an abstract idea based on *SmartGene*. Furthermore, the specific computer implementation for assigning groups of passengers to seats while taking their preferences as individuals and as a group into account that is provided by the present claims also cannot be said as a matter of fact to be a familiar part of the conscious process that travel agents can and do perform in their heads.

(Appeal Br. 13).

We disagree with Appellants. First, automation to reduce the burden on the user of what once could have been done with pen and paper, does not qualify a mental process for patent eligibility. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011). Second, the subject matter of mental thought cannot distinguish one mental process from another because an abstraction does not change its essence because of its subject matter, and a claim for a new abstract idea is still an abstract idea. *See Synopsys, Inc.*, 839 F.3d at 1151. Also, “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240–1241 (Fed. Cir. 2016). Limiting a process to particular content does not make the collection and analysis other than abstract. *See SAP Am. Inc.*, 890 F.3d at 1022.

Appellants argue,

[T]he Examiner has failed to sufficiently show that ‘[t]he additional elements or combination of elements in the claims other than the abstract idea per se amounts to no more than the recitation of generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent industry’.

(Appeal Br. 15).

We disagree with Appellants. The Examiner found, “the recited

memory, processor, medium, and database are merely generic devices used to implement an abstract idea on a computer.” (Answer 4). We agree with the Examiner here because claim 1, for example, only generically requires “a processor,” “a memory,” and “a computer program stored in a non-transitory computer-readable medium, wherein execution of the computer program by the processor causes the system to [perform certain steps].” Thus, the claim speaks for itself. *See Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1578 (Fed. Cir. 1996).

Furthermore, the Examiner cited to prior court decisions in support of his findings. Answer 2–3. In so doing, the Examiner found, “[t]he claims are similar to concepts found ineligible in: *SmartGene v. Advanced Biological Labs.* No. 2013-1186 (Fed. Cir. Jan. 24, 2014). *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 112 U.S.P.Q. 2d 1093 (Fed. Cir. 2014).” *Id.* at 2. These prior court decisions adequately support this finding to satisfy the requirement to set forth a *prima facie* case of unpatentability under 35 U.S.C. § 101. Thus, we find the Examiner’s findings of generic nature of the component parts recited in the claims provides sufficient evidence of a generic computer system used to implement the abstraction. *See Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1057 (Fed. Cir. 2017) (“Significantly, the claims do not provide details as to any non-conventional software for enhancing the financing process”). *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) (explaining that “[o]ur law demands more” than claim language that “provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it”).

Appellants argue, “the present claims set forth a specific combination of computer features and functions that improves upon the conventional activity previously engaged by those in the field, namely, the practice of manually assigning seats to passengers or programming computers to merely select and assign the next available seat.” (Appeal Br. 20).

We disagree with Appellants. As found *supra*, considered as an ordered combination, the computer components of Appellants’ method add nothing that is not already present when the steps are considered separately. Also, the question here is whether the claims as a whole “focus on a specific means or method that improves the relevant technology” or are “directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016). In this case, the claims as a whole are focused on satisfying certain contingencies for “assign[ing] the seats of the selected group of seats to the first group of customers,” which is a result or effect, and not an improvement in the technology of how a processor, memory, and program works.

#### CONCLUSION OF LAW

We conclude the Examiner did not err in rejecting claims 1–8, 13–20, 22–25, 27, and 28 under 35 U.S.C. § 101.

#### DECISION

The decision of the Examiner to reject claims 1–8, 13–20, 22–25, 27, and 28 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED