



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 14/361,925  | 05/30/2014  | Marcia Alves De Inda | 2011P02433WOUS      | 1973             |
| 24737   | 7590        | 03/02/2020           | EXAMINER            |                  |
| PHILIPS INTELLECTUAL PROPERTY & STANDARDS<br>465 Columbus Avenue<br>Suite 340<br>Valhalla, NY 10595 |             |                      | PAULSON, SHEETAL R. |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 3626                |                  |
|   |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|   |             |                      | 03/02/2020          | ELECTRONIC       |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

katelyn.mulroy@philips.com  
marianne.fox@philips.com  
patti.demichele@Philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* MARCIA ALVES DE INDA,  
LEONIE FRANCELLE WAANDERS,  
WENDY UYEN DITTNER, NAGARAJU BUSSA,  
ARUN KUMAR MANI, and JANKE JÖRN DITTMER

---

Appeal 2019-004444  
Application 14/361,925  
Technology Center 3600

---

Before CHARLES N. GREENHUT, JAMES P. CALVE, and  
JEREMY M. PLENZLER, *Administrative Patent Judges*.

CALVE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the decision of the Examiner to reject claims 1–8, 10–14, 16–19, 21, and 22. Appeal Br. 2. Claims 9, 15, and 20 are cancelled. *Id.* at 18–21 (Claims App.); *see* Final Act. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

<sup>1</sup> “Appellant” refers to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Koninklijke Philips Electronics N. V. as the real party in interest. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Claims 1, 11, and 16 are independent. Claim 1 is reproduced below.

1. A system for scheduling a sequence of examinations of a plurality of patients in a clinical setting, the system comprising:
  - a first data base comprising examination data relating to a specific type of examination, the examination data including time consumption, and the examination data relating usage of resources associated with the specific type of examination,
  - a second data base comprising patient data of the plurality of patients scheduled for upcoming examinations within a specified time frame, the patient data comprising, for each patient of the plurality of patients, an associated list of examinations that the patient is to undergo, and
  - a scheduling unit operatively coupled to the first data base and the second data base,
    - wherein the scheduling unit determines a sequence of examinations for each patient of the plurality of patients subject to a constraint that an estimated total examination time for each patient is within a given maximum examination time, based on their associated list of examinations and the examination data, the sequence including information relating to time and type of examination, and
    - the system further comprises an input unit that receives progress information on progress of the plurality of patients currently undergoing examination in accordance with the sequence of examinations, and
    - wherein the scheduling unit modifies the sequence of examinations for the plurality of patients subject to the constraint that the estimated total examination time for each patient is within the given maximum examination time when the progress of the plurality of patients indicates that the total examination time of at least one patient in the plurality of patients is expected to exceed the given maximum examination time, and communicates a modified schedule of examinations to at least one patient of the plurality of patients.

## REJECTIONS

Claims 1–8, 10–14, 16–19, 21, and 22 are rejected as directed to patent-ineligible subject matter under a judicial exception to 35 U.S.C. § 101.

Claims 1–4, 10–13, 16–19, and 22 are rejected under 35 U.S.C. § 103(a) as unpatentable over Egawa (US 2005/0228696 A1, pub. Oct. 13, 2005) and Kurian (US 2006/0053044 A1, pub. Mar. 9, 2006).

Claims 5, 6, 8, 14, and 21 are rejected under 35 U.S.C. § 103(a) as unpatentable over Egawa, Kurian, and Ono (US 2007/0271213 A1, pub. Nov. 22, 2007).

Claim 7 is rejected under 35 U.S.C. § 103(a) as unpatentable over Egawa, Kurian, Ono, and Umeda (JP2008171298A, pub. July 24, 2008).

## ANALYSIS

*Claims 1–8, 10–14, 16–19, 21, and 22  
Rejected under a Judicial Exception to 35 U.S.C. § 101*

Appellant argues the claims as a group. *See* Appeal Br. 8–10. We select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Regarding claim 1, the Examiner determines that claim 1 recites a mental process and a method of organizing human activity by scheduling examinations of patients through collecting and comparing examination and patient information to provide a schedule of a sequence of examinations that do not provide a concrete, physical application. Final Act. 3–4, 13; Ans. 14.

The Examiner determines claim 1 lacks additional elements that are significantly more than the abstract ideas because they are generic computer structures performing generic functions that do not integrate the abstract ideas into a practical application. Final Act. 4–6, 14–15; Ans. 14–17.

Section 101 of the Patent Act defines patent-eligible-subject matter as:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. § 101 (2012). However, “[l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (citation omitted).

To distinguish patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications, we first determine whether the claims are directed to a patent-ineligible concept. *Id.* at 217. If they are, we consider the elements of each claim, individually and as an ordered combination, to determine if additional elements transform the claim into a patent-eligible application, e.g., by providing an “inventive concept” that ensures the patent amounts to significantly more than a patent on the ineligible concept. *Id.* at 217–18.

The USPTO has issued guidance about this framework. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”). Under the Revised Guidance, to determine whether a claim is “directed to” an abstract idea, we evaluate whether the claim recites (1) any judicial exceptions, including certain groupings of abstract ideas listed in the Revised Guidance (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)). *See* Revised 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 consider whether the claim (3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)) or (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. *Id.* at 56.

*Step 1: Is Claim 1 to a Statutory Category?*

The Examiner finds that claim 1 recites a system, which is a statutory category of 35 U.S.C. § 101, namely, a machine. Final Act. 2; *see* Appeal Br. 9 (arguing that claim 1 recites a system).

*Alice Step 1, Revised Step 2A, Prong One: Are Judicial Exceptions Recited?*

Appellant argues that the claims do not recite a mathematical concept, a method of organizing human activity, or a mental process under the 2019 Revised Guidance. Appeal Br. 9. Appellant argues that managing dynamic changes to a multi-dimensional schedule is not a mental process because it cannot be performed in a reasonable amount of time in one’s mind or even using a computer. Reply Br. 2 (citing Appeal Br. 3–4). Appellant argues that “determining a time for examination based on constraints is a relatively trivial task” but the claims schedule and monitor a plurality of patients who undergo a plurality of examinations so rescheduling requires each possible rearrangement of scheduled examinations to be evaluated for each patient in an “iterative trial-and-error approach [that] cannot feasibly be performed in a person’s mind for any but the most trivial number of patients and/or examinations.” *Id.* at 3. Appellant argues that rescheduling is not a certain method of organizing human activity in the Revised Guidance. *Id.* at 3–4.

We agree with the Examiner that claim 1 recites what the Revised Guidance characterizes as “[c]ertain methods of organizing human activity” and “managing personal behavior or relationships or interactions between people (including . . . following rules or instructions).” Revised Guidance, 84 Fed. Reg. at 52; *see* Ans. 14. The preamble of claim 1 recites this abstract concept as one of “scheduling a sequence of examinations of a plurality of patients in a clinical setting.” Appeal Br. 17 (Claims App.).

Appellant’s Specification confirms that this activity involves certain methods of organizing human activity under the 2019 Revised Guidance. The field of the invention “relates to scheduling of a series of events, such as medical examinations for a patient in a clinical setting.” Spec. 1:2–3. The system “keeps the time spent on a series of related event, e.g. time spent by a person in a clinical setting such as a hospital or other examination set-up below a given threshold while maximising the utilisation of [equipment] and number of recipients, i.e. persons.” *Id.* at 3:20–23.

Merely organizing patient health information is an abstract idea. *See In re Salwan*, 681 F. App’x 938, 941 (Fed. Cir. 2017) (claims to storing, communicating, processing, and transmitting patient medical information via a network recite an abstract idea of organizing patient health information).

Such activity also involves mental processes and concepts performed in the human mind of observation, evaluation, and judgment as the Examiner correctly determines. Final Act. 14; Ans. 14–15; Revised Guidance, 84 Fed. Reg. at 52; *see SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App’x 950, 951, 954–55 (Fed. Cir. 2014) (replicating the mental processes of a doctor to select different treatments is an abstract idea); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 n.2 (Fed. Cir. 2011).

The first and second databases recite steps of organizing this human activity involved in scheduling a sequence of examinations for a plurality of patients by storing data related to this activity at a high level of generality.

“[a] first data base compris[es] examination data relating to a specific type of examination, the examination data including time consumption, and the examination data relating usage of resources associated with the specific type of examination.” Appeal Br. 17 (Claims App.). “[A] second data base compris[es] patient data of the plurality of patients scheduled for upcoming examinations within a specified time frame comprising . . . an associated list of examinations that the patient is to undergo.” *Id.*

The databases store data as such. They organize time and equipment resources required for each examination of each patient and the “time frame” needed to complete a sequence of examinations to facilitate management of this patient activity and interactions with medical personnel performing the examinations. The first data base can include statistical information on how long each examination consumes including a minimum time, a mean time, a maximum time, and a distribution for the duration of the examination. Spec. 5:1–5. The data relating to usage of resources associated with each specific type of examination may include the number of examination stations and information on equipment and operator availability that allows the system “to optimise the schedules with a certain probability of the schedule being complied with.” *Id.* at 5:5–7, 11:3–7.

The second data base includes data to organize each patient and their associated list of examinations that must be conducted within a specific time frame as a time constraint or a maximum time used for each specific patient as set by an operator, hospital management or department. *Id.* at 11:8–17.

The claimed “scheduling unit” is “operatively coupled to the first data base and the second data base” and “determines a sequence of examinations for each patient of the plurality of patients subject to a constraint that an estimated total examination time for each patient is within a given maximum examination time, based on their associated list of examinations and the examination data, the sequence including information relating to time and type of examination.” Appeal Br. 17 (Claims App.). It organizes patients to arrive at examinations without delay, optimises equipment usage, and keeps the time spent in a hospital/clinic below a maximum value. Spec. 11:24–27.

This limitation recites the abstract idea of organizing patient activity into a sequence of examinations (interactions) subject to a constraint that the examinations should occur “within a given maximum examination time.” This limitation also recites a mental process that humans can and do perform in their minds or with pencil and paper to schedule examinations of patients in a sequence that ends within a maximum time, e.g., a day. Spec. 4:25–29.

As discussed above, the “maximum examination time” can be set by an operator who schedules the examinations, hospital management, specific departments, or as a default value. Spec. 5:14–26, 11:8–17. This feature “optimises the usage of the equipment as well as keeping the time spent in the hospital or clinic by the patient below a maximum value.” *Id.* at 11:27–28. Such optimization of equipment usage and patient time also organizes human activity and personal interactions and recites mental processes. *See CyberSource*, 654 F.3d at 1372 & n.2 (holding that mental processes are not patent-eligible even when a practical application is claimed such as a method of conducting auctions to maximize sales revenue or optimizing organization of sales representatives in a business).

Furthermore, mathematical formulas may be used for scheduling.

The scheduling unit 16 may employ any appropriate existing scheduling algorithm, e.g., linear programming, genetic algorithms, or any other suitable algorithm including numerical algorithms, or a combination of those to solve the problem with the goal of keeping the total patient stay shorter than the pre-determined maximum, while maximizing the number of patients that can be served in a day.

Spec. 12:20–26. Using mathematical equations to schedule the activities of patients undergoing medical examinations, without more, is an abstract idea. *See Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (“Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible.”); Revised Guidance, 84 Fed. Reg. at 52 (mathematical concepts are an abstract idea).

The final limitation recites that

the scheduling unit modifies the sequence of examinations for the plurality of patients subject to the constraint that the estimated total examination time for each patient is within the given maximum examination time when the progress of the plurality of patients indicates that the total examination time of at least one patient in the plurality of patients is expected to exceed the given maximum examination time, and communicates a modified schedule of examinations to at least one patient of the plurality of patients.

Appeal Br. 17 (Claims App.). This step also involves the abstract idea of organizing human activities of patients undergoing medical examinations and their interactions with medical personnel performing the examinations. It accounts for patients who arrive early, arrive late, cancel, or don’t show up as well as equipment that fails or is being serviced. Spec. 16:7–14.

Appellant’s arguments that this limitation is an “iterative trial-and-error approach [that] cannot feasibly be performed in a person’s mind for any but the most trivial number of patients and/or examinations” is not commensurate with the scope of claim 1 and is not persuasive. Reply Br. 3.

Claim 1 recites a system that schedules a sequence of examinations for “a plurality of patients” without specifying any number of patients or examinations. The Field of the Invention describes “[t]he present invention” as “scheduling of a series of events, such as medical examinations for *a* patient in a clinical setting . . . or any other situation where use of resources are to be scheduled to a *number* of users.” Spec. 1:2–5 (emphasis added); *see id.* at 3:23–24 (“the recipients could be a number of clients, e.g. patients . . . per day.”) Contrary to Appellant’s arguments, claim 1 encompasses a “trivial number of patients and/or examinations.” *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997) (“[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.”); *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016) (“Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history.”).

Accordingly, we determine that claim 1 recites certain methods of organizing human activity and managing personal behavior or relationships or interactions between people (including following rules or instructions), mental processes, and mathematical concepts or equations discussed above.

*Alice Step 1, Revised Step 2A, Prong Two: Is There an Integration?*

We next consider whether claim 1 recites additional elements that integrate the abstract ideas into a practical application. Revised Guidance, 84 Fed. Reg. at 54–55 (Revised Step 2A, Prong Two).

The Examiner determines that claim 1 does not integrate the judicial exceptions into a practical application because it only recites a database and a scheduling unit as generic components that perform generic functions that amount to no more than mere instructions to apply the exceptions using a generic computer component. Ans. 15–16. The Examiner also determines that accessing the databases and obtaining progress information merely add insignificant extra-solution activity to the abstract idea without improving the functioning of a computer or another technology or technical field. *Id.*

Appellant argues that

the applicants' claims are *directed to* dynamically scheduling a sequence of examinations of a plurality of patients, based on the constraint that the total examination time for each patient is within a given maximum examination time. The applicants' invention assures that each patient will complete his/her series of examinations within this maximum examination time. The applicants respectfully maintain that, assuming in argument that the claims recite an abstract idea, the claims are directed to a practical application of such an abstract idea.

Appeal Br. 10. The Examiner has the better position on this issue.

First, the claimed dynamic scheduling of sequences of examinations of patients based on a total examination time for each patient merely recites the abstract ideas identified in claim 1. Thus, these features cannot provide an additional element to make claim 1 or those abstract ideas patent-eligible. *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018).

Second, it is well-settled that reciting an abstract idea in a physical environment, without more, is insufficient by itself to make the abstract idea patent-eligible. *See SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (“Here, in contrast, the focus of the claims is not a physical-realm improvement but an improvement in wholly abstract ideas—the selection and mathematical analysis of information, followed by reporting or display of the results.”); *see also* Revised Guidance, 84 Fed. Reg. at 55.

Here, the Specification describes changing a schedule “dynamically” as adding new patients with a list of examinations may and altering a list of examinations of a specific patient. Spec. 5:7–10. This concept is recited at a high level of generality without any technical improvement to computers, databases, or other technology. It does not link the abstract idea of dynamic scheduling to a particular machine that is integral to the claims. It reshuffles examinations to stay “within a given maximum examination time.” Thus, it does not integrate the abstract ideas in claim 1 into a practical application.

The first and second data bases are data structures that *contain* data without improved functionality. Spec. 11:3–12:19, 14:16–31, 15:20–16:2. They merely apply the abstract ideas in a generic computer environment. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1341 (Fed. Cir. 2017) (although data structures add particularity, they involve the abstract idea of organizing, displaying, and manipulating data).

As discussed above, the claimed scheduling unit also is recited at a high level of generality to perform steps of organizing human activity and may use any appropriate existing scheduling algorithm. Spec. 12:20–26. Therefore, this feature does not integrate the abstract ideas into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 55.

The claimed “input unit” performs the generic function of inputting data and may be a computer device or a keyboard operated by a health care person. Spec. 7:32–34, 9:17–19. This feature cannot integrate the abstract ideas into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 55.

Claim 1 lacks additional elements that integrate the abstract ideas into a practical application. *See BSG*, 899 F.3d at 1286 (“[C]laims are not saved from abstraction merely because they recite components more specific than a generic computer.”); *In re TLI Commc’ns Patent Litig.*, 823 F.3d 607, 615 (Fed. Cir. 2016) (holding claims were directed to an abstract idea despite the claims’ recitation of telephone units and servers); *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (claims reciting an “interface,” “network,” and a “database” are nevertheless directed to an abstract idea).

Any innovation resides in the realm of the abstract ideas recited in claim 1 rather than in a technical improvement to a particular technology that is integral to the claim. The databases and scheduling unit operate as expected. They collect, analyze, and process data to schedule examinations of patients in a “sequence” that is *estimated* to be within a given maximum examination time. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract.”); *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.”); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (claims that improved an abstract idea, but not a computer’s performance, were held unpatentable).

Essentially, Appellant argues that claim 1 recites a combination of abstract ideas that is a technological advance. The law holds otherwise. *Synopsys, Inc.*, 839 F.3d at 1151 (“[A] claim for a *new* abstract idea is still an abstract idea.”); *Versata Dev. Grp., Inc.*, 793 F.3d at 1335 (claims that improved an abstract idea, but not a computer’s performance, were held unpatentable); *RecogniCorp, LLC*, 855 F.3d at 1327.

As recited at such a high level of generality without any associated improvements to computers or other technology, claim 1 merely recites the automation of manual activities or mental steps, which does not integrate the abstract ideas into a practical application. *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.”); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.”); *In re Salwan*, 681 F. App’x at 941 (claims to organizing patient health information recited little more than automation of a method of organizing human activity with respect to medical information).

Even if we assume that the techniques claimed are “[g]roundbreaking, innovative, or even brilliant,” that is not enough for eligibility. *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013); *accord buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352 (Fed. Cir. 2014).

Accordingly, we determine that claim 1 does not integrate the abstract ideas recited therein into a practical application.

*Alice Step 2, Revised Step 2B — Inventive Concept*

We next consider whether claim 1 recites any elements, individually, or as an ordered combination, that provide an inventive concept. *Alice*, 573 U.S. at 217–18. “The second step of the *Alice* test is satisfied when the claim limitations involve more than performance of well-understood, routine [and] conventional activities previously known to the industry.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018) (internal quotation marks omitted, alteration in original); *see also* Revised Guidance, 84 Fed. Reg. at 56 (explaining that the second step of the *Alice* analysis considers whether a claim adds a specific limitation beyond a judicial exception that is not “well-understood, routine, conventional” activity in the field).

We agree with the Examiner that claim 1 recites elements that courts consider well-understood, routine, and conventional computer functions of gathering data, accessing databases, and updating data using general purpose computers that do not improve any technology and are not integral to the use of the abstract ideas. Ans. 15–16. Individually, these limitations “apply” the abstract ideas on generic components that perform generic functions.

USPTO Memorandum of April 19, 2018, “Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)” (Apr. 19, 2018), *available at* <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF> (“*Berkheimer* memo”) indicates that the Specification may describe additional elements in a manner that indicates that the elements are sufficiently well-known such that the Specification need not describe their particulars to satisfy 35 U.S.C. § 112(a). *Berkheimer* memo at 3–4. This is such a case. Spec. 7:32–34, 9:17–19, 11:3–12:26, 14:16–31, 15:20–16:2.

There is nothing unconventional about the “ordered combination” that is not merely the sum of the parts. *See In re TLI Commc’ns*, 823 F.3d at 615 (holding that the “recited physical components behave exactly as expected according to their ordinary use,” through “steps that generically spell out what it means to ‘apply it on a telephone network’ [and] cannot confer patent eligibility”); *see also Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (A sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recites an abstraction.); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (holding a conventional ordering of steps of processing, routing, controlling, and monitoring data is not inventive). The claimed ordering of the steps therefore is ordinary and conventional.

Accordingly, we determine that claim 11 does not recite any elements, considered individually or as an ordered combination, that provide an inventive concept sufficient to transform the abstract idea into patent eligible subject matter. Accordingly, we sustain the rejection of claims 1–8, 10–14, 16–19, 21, and 22 as directed to a judicial exception.

*Claims 1–4, 10–13, 16–19, and 22  
Rejected as Unpatentable over Egawa and Kurian*

The Examiner cites Kurian to teach a scheduling unit that modifies a sequence of examinations of a plurality of patients subject to the constraint that the estimated total examination time for each patient is within the given maximum examination time as recited in independent claims 1, 11, and 16. Final Act. 7–10. Appellant argues that Kurian does not address a maximum examination time nor does Kurian assure that each patient completes a series of examinations within a maximum examination time. Appeal Br. 14–15.

The Examiner is correct in finding that Kurian teaches to adjust and update a schedule of patient examinations, e.g., if unanticipated delays occur or if a patient arrives earlier than scheduled. Kurian ¶ 41. Neural network 184 either updates the live schedule or maintains it. *Id.* Kurian’s system is capable of rearranging a sequence of appointments if the task scheduled for later in the same day is ready to be executed and the schedule is idle at the moment because another task that is supposed to start is late. *Id.* ¶ 43. This rearrangement sequence can accommodate early patient arrivals. *Id.* The system also can shift a blocked time grouped into a sequence of similar procedures to optimize daily or weekly schedules. *Id.* ¶ 44; *see* Final Act. 8 (citing Kurian ¶¶ 41, 42, 44 for the schedule modification limitation).

However, we agree with Appellant that these features of Kurian do not teach a scheduling unit that modifies a sequence of examinations subject to the constraint that the estimated *total examination time* for each patient is within the given maximum examination time. The “total examination time” is the total time of the sequence of examinations scheduled for a patient. Egawa and Kurian both teach to schedule examinations to stay within a total time of a *single examination*, but neither reference estimates the total time for a *sequence of examinations* for each patient as claimed.

Kurian modifies a schedule when the examination time of a single examination is expected to exceed the maximum time for that particular examination. *See* Ans. 18. Kurian thus changes an appointment time for a particular examination without regard to the total examination time of the entire sequence of examinations for a patient as claimed. Kurian ¶¶ 41–44.

Thus, we do not sustain the rejection of claims 1, 11, and 16 or their respective dependent claims 2–4, 10, 12, 13, 17–19, and 22.

*Rejections of Dependent Claims 5–8, 14, and 21*

We agree with Appellant that claims 5–8, 14, and 21 are patentable because they depend from independent claims 1, 11, and 16, and Egawa and Kurian do not render those independent claims obvious. Appeal Br. 16.

Thus, we do not sustain the rejection of these dependent claims.

CONCLUSION

| <b>Claims Rejected</b>    | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b> | <b>Affirmed</b>           | <b>Reversed</b>       |
|---------------------------|--------------------|---------------------------|---------------------------|-----------------------|
| 1–8, 10–14, 16–19, 21, 22 | 101                | Judicial Exception        | 1–8, 10–14, 16–19, 21, 22 |                       |
| 1–4, 10–13, 16–19, 22     | 103(a)             | Egawa, Kurian             |                           | 1–4, 10–13, 16–19, 22 |
| 5, 6, 8, 14, 21           | 103(a)             | Egawa, Kurian, Ono        |                           | 5, 6, 8, 14, 21       |
| 7                         | 103(a)             | Egawa, Kurian, Ono, Umeda |                           | 7                     |
| <b>Overall Outcome</b>    |                    |                           | 1–8, 10–14, 16–19, 21, 22 |                       |

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

AFFIRMED