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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* W. T. GREEN JR., W.T. GREEN III, JAMES T. INGRAM, JASON COLQUITT, ANTONIO GERENA, MARK ANDERSON, JOHNATHAN SAMPLES, and GREGORY H. SCHULENBURG

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Appeal 2018-007927
Application 13/155,084
Technology Center 3600

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Before JOHN A. JEFFERY, DENISE M. POTHIER, and JUSTIN BUSCH, *Administrative Patent Judges*.

POTHIER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1,2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1–3, 6, 7, 21, and 25–42. Appeal Br. 2, 24 (Claims App'x).

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[1] Throughout this opinion, we refer to the Final Action (Final Act.) mailed July 13, 2017, the Advisory Action (Adv. Act.) mailed December 20, 2017, the Appeal Brief (Appeal Br.) filed January 16, 2018, the Examiner's Answer (Ans.) mailed May 31, 2018, and the Reply Brief (Reply Br.) filed July 31, 2018.

[2] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Greenway Medical Technologies, Inc. Appeal Br. 2.

Claims 4, 5, 8–20, and 22–24[3] have been canceled. *Id.* at 21 (Claims App'x).

We AFFIRM.

Appellant's invention relates to "a medical software system that integrates each of the systems required to manage the different activities performed at a healthcare practice . . . on a single technology platform so that duplicate and/or inconsistent data is not captured, stored, and managed by disparate, stand-alone systems." Spec. ¶ 61, Fig. 1. The medical software system "provides clinical decision support through the automation of clinical and administrative flags that provide healthcare providers with various alerts, reminders, and recommendations." *Id.* ¶ 63.

Independent claim 1 exemplifies the claims at issue and reads as follows:

> 1. A method for providing clinical decision support by an integrated medical software system, the method comprising:
>
> receiving input data via a user interface, the input data including clinical data for a patient;
>
> serializing, by a clinical module executed by a processor, the input data into a standardized database language;
>
> translating, by the clinical module executed by the processor, the serialized input data into a controlled medical vocabulary;
>
> associating, by an interoperability engine executed by the processor, the serialized input data with clinical coding;
>
> placing, by the clinical module executed by the processor, the input data into a first electronic clinical document defined by a clinical document exchange standard specifying

[3] Appellant omits claim 28 as a pending claim in the Status of Claims section (Appeal Br. 2) but includes claim 28 as pending in the Claims Appendix (*id.* at 22 (Claims App'x)). Claim 28 was introduced in an amendment submitted August 4, 2016 and has not been canceled.

> the structure and semantics of the first electronic clinical document;
>
> communicating, by a communication component executed by the processor, the first electronic clinical document to a rule-based clinical decision support (CDS) system that compares the input data with rules defined by evidence-based medical knowledge and returns at least one clinical flag in an electronic document defined by the clinical document exchange standard based on the comparison; and
>
> outputting an alert, warning, reminder, and/or recommendation based on based on [sic] the at least one clinical flag.

Appeal Br. 20 (Claims App'x).

## THE PROVISIONAL DOUBLE PATENTING REJECTION

The Examiner rejected claims 1–3, 6, 7, 21, and 25–42 on the ground of non-statutory provisional[4] obviousness-type double patenting over (1) claims 1–20 of Application No. 13/036,973; (2) claims 67, 68, 70, 72, 74–83, 85, 87, 89–96 of Application No. 10/202,627; and (3) claims 1–24 of Application No. 12/392,998. Final Act. 3. In the Advisory Action, however, the Examiner held the rejection "in abeyance." Adv. Act. 2. Accordingly, we presume this rejection is not before us.

[4] We note that Application Nos. 13/036,973 and 12/392,998 issued as US 8,738,396 B2 on May 27, 2014, and US 8,606,593 B1 on December 10, 2013, respectively. The Manual of Patent Examining Procedure (MPEP) discusses when an obviousness-type double patenting rejection should or should not be provisional. *See* MPEP §§ 804(I)(A)–(B) (9th ed. rev. 08.2017 Jan. 2018). Also, Application No. 10/202,627 was abandoned on March 21, 2019.

THE INDEFINITENESS REJECTION

The Examiner rejected claims 3 and 33 under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA), second paragraph as being indefinite. Final Act. 4.[5] In particular, the Examiner states there is insufficient antecedent basis because claims 3 and 33 "recite the limitation 'the' various standards." *Id.* Appellant argues the various standards recited in the claims are proper nouns that refer to specific technical standards known to those skilled in the art, who can readily ascertain the standards' specifics. Appeal Br. 5; Reply Br. 5. We agree.

Claims 3 and 33 each recite "the clinical document exchange standard is at least one of the Clinical Document Architecture (CDA) standard, the Continuity of Care Record (CCR) standard, and the Continuity of Care Document (CCD) standard." Appeal Br. 20, 23 (Claims App'x). To the extent the Examiner finds that the claims are indefinite for reciting "the" CDA, CCR, and CCD standards, failure to provide explicit antecedent basis for a term in a claim does not *per se* render the claim indefinite. "[D]espite the absence of explicit antecedent basis, if the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1370–71 (Fed. Cir. 2006).

"A decision on whether a claim is [indefinite] under § 112, 2d para., requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification."

[5] Later, the Examiner finds claims *26* and 33 recite "the" various standards. Final Act. 4. We presume, as does Appellant (*see* Appeal Br. 4), that the Examiner intended to refer to claims 3 and 33 reciting "the" various standards and deem the Examiner's typographical error to be harmless.

*Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). The Specification describes characteristics and details regarding the CDA, CCR, and CCD standards, such that one skilled in the art would have understood what is claimed when read in light of the disclosure. *See* Spec. ¶ 95. For example, the Specification describes the CCD standard as "a uniform clinical document exchange standard . . . for specifying the structure and semantics of electronic documents" (i.e., a structured XML standard developed by HL7 and ASTM) and the CDA standard as "an exchange model for clinical documents . . . that uses various coded vocabularies . . . ." *Id.* Similarly, the Specification describes the CCR standard as "provid[ing] [a] patient health summary model for clinical documents by identifying the most relevant and timely core health-related information about a patient so that information can be sent electronically from one healthcare provider to another." *Id.*

Although the Examiner asserts "there are many publishers of the CDA standard" (*see* Ans. 3) and "there is no single prevailing CDA standard in the art" (Ans. 7), the Examiner does not substantiate this position. On other hand and as noted, the Specification describes CDA as standard developed by "HL7." Spec. ¶ 95. Moreover, having the CDA standard published by different publishers or certified by a national body does not illustrate the *resulting* CDA standard that sets forth an exchange model (*see id.*) differs from one publisher to another. *See* Ans. 4. In light of Appellant's arguments and the Specification, we determine that the meaning of the CDA, CCR, and CCD standards in claims 3 and 33 would have been sufficiently clear to one of ordinary skill in the art. *See In re Packard*, 751 F.3d 1307, 1314 (Fed. Cir. 2014).

When weighing the evidence in the record, we are persuaded that the Examiner erred in rejecting claims 3 and 33 under 35 U.S.C. § 112, second paragraph.

## THE PATENT-ELIGIBILITY REJECTION

Claims 1–3, 6, 7, 21, and 25–42 are rejected under 35 U.S.C. § 101 as being directed to a judicial exception without significantly more. Final Act. 5–13. The Examiner determined that the claims are directed to an abstract idea, namely "receiving input data, processing that input[,] and providing an alert as the result of the processing" (*id.* at 6) and "managing the operations of a physician practice" (Adv. Act. 6). The Examiner added that the claims do not include additional elements or limitations individually or in combination that are sufficient to amount to significantly more than the judicial exception. Final Act. 6. Based on these determinations, the Examiner concluded that the claims are ineligible under § 101. *Id.* at 5.

Appellant argues the focus of the claims is on a specific improvement in computer capabilities. *See* Appeal Br. 13–18; Reply Br. 7. According to Appellant, the claims recite elements directed to solving a technical problem associated with providing the interoperability for transferring patient clinical data from a clinical module to a rule-based CDS system so that the CDS system understands the data. *See* Appeal Br. 13–17 (citing Spec. ¶¶ 14, 87–95); Reply Br. 7.

## ISSUE

Under § 101, has the Examiner erred in rejecting the claims by determining that the claims are directed to judicially excepted, patent ineligible subject matter?

## PRINCIPLES OF LAW

An invention is patent eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[L]aws of nature, natural phenomena, and abstract ideas" are not patentable. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (brackets in original) (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217–18 (2014) (citing *Mayo*, 566 U.S. at 75–77). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611);

mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding of rubber products" (*Diehr*, 450 U.S. at 193); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). That said, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-

eligible application." *Alice*, 573 U.S. at 221 (quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

In January 2019, the USPTO published revised guidance on the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance"). Under the Revised Guidance, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes) (Revised Guidance, 84 Fed. Reg. at 52–54); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* the Manual of Patent Examining Procedure (MPEP) §§ 2106.05(a)–(c), (e)–(h)) (Revised Guidance, 84 Fed. Reg. at 53–55.

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

> (3) adds a specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* Revised Guidance, 84 Fed. Reg. at 56 ("Step 2B").

## ANALYSIS

Appellant argues claims 1–3, 6, 7, 21, and 25–42 as a group. *See* Appeal Br. 11–18. We select independent claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv). Claim 1's subject matter falls within a statutory category of patentable subject matter—a process. *See* Revised Guidance, 84 Fed. Reg. at 53–54.

### *Alice Step One*

Despite falling within a statutory category, we determine whether claim 1 as a whole is directed to a judicial exception, namely an abstract idea. *See Alice*, 573 U.S. at 217. To this end, we determine (1) whether claim 1 recites a judicial exception ("Revised Step 2A - Prong 1") and, if so, (2) whether the identified judicial exception is integrated into a practical application ("Revised Step 2A – Prong 2"). *See* Revised Guidance, 84 Fed. Reg. at 52–55. If both elements are satisfied, the claim is directed to a judicial exception under the first step of the *Alice/Mayo* test. *See id.*

### *Revised Step 2A - Prong 1*

In Revised Step 2A - Prong 1, we identify the claim's specific limitations that recite a judicial exception, and determine whether the identified limitations fall within certain subject matter groupings, namely (a) mathematical concepts (mathematical relationships, formulas, and calculations); (b) certain methods of organizing human activity (e.g.,

fundamental economic practices, commercial or legal interactions, and managing personal behavior or interactions between people); or (c) mental processes (e.g., concepts performed in the human mind including an observation, evaluation, judgment, or opinion). *See* Revised Guidance, 84 Fed. Reg. at 52. We agree with the Examiner (*see* Final Act. 5) that claim 1 recites at least one judicial exception.

Claim 1 recites "[a] method for providing clinical decision support . . . ," the method comprising the following steps: (A) "receiving input data . . . , the input data including clinical data for a patient," (B) "serializing . . . the input data into a standardized . . . language," (C) "translating . . . the serialized input data into a controlled medical vocabulary," (D) "associating . . . the serialized input data with clinical coding," (E) "placing . . . the input data into a first . . . clinical document defined by a clinical document exchange standard specifying the structure and semantics of the first . . . clinical document," (F) "communicating . . . the first . . . clinical document to a[n entity] that compares the input data with rules defined by evidence-based medical knowledge and returns at least one clinical flag in . . . [a] document defined by the clinical document exchange standard based on the comparison," and (G) "outputting an alert, warning, reminder, and/or recommendation based on . . . the at least one clinical flag." *Id.* (Claims App'x) ("steps (A)–(G)").

Steps (A)–(D), under their broadest reasonable interpretation, recite interpreting received clinical data for a patient into standardized formats. *See id.* (Claims App'x); *see also* Spec. ¶ 100. All these steps recite processes that would occur normally in a human's mind when interpreting

received clinical data for a patient, which are operations within a physician's practice. *See* Adv. Act. 6.

For example, "receiving input data . . . , the input data including clinical data for a patient," as step (A) recites, is a process that a person can perform mentally (or with pen and paper) by merely *observing* the input data, such as a clinician can merely observe a patient's medical condition (e.g., patient has a fever, fatigue, and nasal congestion). Next, "serializing . . . the input data into a standardized . . . language," as step (B) recites, encompasses a person *evaluating* such observed input data by mentally (or with pen and paper) arranging the observed input data in parts using a standardized language (e.g., English), such as the clinician can evaluate and organize the patient's self-described medical condition in one's mind or can memorialize the patient's symptoms in a medical file in the standard language. "[T]ranslating . . . the serialized input data into a controlled medical vocabulary," as step (C) recites, encompasses a person *evaluating* such serialized input data by mentally (or with pen and paper) translating the serialized input data into a controlled medical vocabulary, such as the clinician can translate the symptoms into a controlled medical vocabulary (e.g., patient may have influenza A). Next, "associating . . . the serialized input data with clinical coding," as step (D) recites encompasses a person evaluating the serialized input data by mentally (or with pen and paper) associating the serialized input data with clinical coding (e.g., associating patient with clinical code 87804 to perform influenza testing).

Steps (E)–(G), under their broadest reasonable interpretation, recite standardizing input data in a clinical document and generating an alert based on comparing standardized input data with rules defined by medical

knowledge. *See* Appeal Br. 20 (Claims App'x). These are processes that also would occur normally in a human's mind and are operations within a physician's practice. *See* Adv. Act. 6.

For example, "placing. . . the input data into a first . . . clinical document defined by a clinical document exchange standard specifying the structure and semantics of the first . . . clinical document," as step (E) recites, is a process that a person can perform with pen and paper by merely *evaluating* such input data. To illustrate, a clinician can place observed input data into specific clinical document fields with pen and paper (e.g., a medical file document in English having a name field, an address field, an age field, and a condition field). "[C]ommunicating . . . the first . . . clinical document to a[n entity] that compares the input data with rules defined by evidence-based medical knowledge and returns at least one clinical flag in . . . [a] document defined by the clinical document exchange standard based on the comparison," as step (F) recites, encompasses a process that people can perform mentally (or with pen and paper) by merely *evaluating* the first clinical document into which input data was placed. For example, a second clinician can mentally compare the first clinical document's data (e.g., can look at the patient's medical file), apply rules defined by evidence-based medical knowledge (e.g., medical handbooks/literature) to the data, and include a flag (e.g., include a note that the patient has influenza A based on tests) in the document using pen and paper based on the mental comparison. Lastly, "outputting an alert, warning, reminder, and/or recommendation based on . . . the at least one clinical flag," as step (G) recites, encompasses a process that a person can perform mentally (or with pen and paper) by merely *evaluating* the at least one clinical flag. For example, the original

clinician can read the medical file and inform the patient (e.g., email the patient) describing the condition (e.g., output an alert) or recommending rest (e.g., output a recommendation).

Thus, with the exception of generic computer-implementation recited in claim 1, there is nothing in steps (A)–(G) that forecloses the steps from being performed mentally or with pen and paper. *See Univ. of Fla. Res. Found. v. Gen. Elec. Co.*, 916 F.3d 1363, 1366–67 (2019) (indicating an invention directed to integrating physiologic treatment data sought to automate "pen and paper methodologies"); *see Voter Verified, Inc. v. Election Sys. & Software LLC*, 887 F.3d 1376, 1384–86 (2018) (indicating a method for self-verifying a ballot when voting, including data comparison, is a mental process that can be performed by humans or with pen and paper) (citing *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011)); *see Benson*, 409 U.S. at 67 (indicating converting BCD numbers to pure binary numbers can be done mentally and that "mental processes ... are not patentable, as they are the basics tools of scientific and technological work").

For the above reasons, we conclude claim 1 as a whole recites mental processes identified in the Revised Guidance. *See* Revised Guidance, 84 Fed. Reg. at 52. Accordingly, we determine claim 1 recites an abstract idea.

*Revised Step 2A - Prong 2*

Because claim 1 recites an abstract idea, we must determine whether the abstract idea is integrated into a practical application, namely whether the claim applies, relies on, or uses the abstract idea in a manner that imposes a meaningful limit on the abstract idea, such that the claim is more than a drafting effort designed to monopolize the abstract idea. *See* Revised

Guidance, 84 Fed. Reg. at 53. We (1) identify whether there are any additional, recited elements beyond the judicial exception, and (2) evaluate those elements individually and collectively to determine whether they integrate the exception into a practical application. *See id.*, 84 Fed. Reg. at 54–55.

The additionally recited elements beyond the above-identified judicial exceptions in claim 1 are "an integrated medical software system," "a user interface," "a processor," "a clinical module executed by the processor," "an interoperability engine executed by the processor," "a communication component executed by the processor," "electronic clinical document," a "clinical flag in an electronic document," and "a rule-based clinical decision support (CDS) system." Appeal Br. 20 (Claims App'x); *see* Final Act. 6. When considering these elements individually or in combination, we determine they do not integrate the above-identified judicial exception(s) into a practical application.

Contrary to Appellant's assertions (*see* Appeal Br. 13–18), the additional elements beyond the identified judicial exceptions do not reflect an improvement in a computer's functioning or an improvement to other technology or technical field as set forth in MPEP § 2106.05(a) and the Revised Guidance, 84 Fed. Reg. at 55. *See* Ans. 8 (citing Spec. 19, 25–27, 37–38). Here, consistent with the disclosure as discussed below, the additionally recited elements automate the above-identified abstract idea (i.e., mental processes) using generic computer elements as tools but do not constitute a patentable improvement in a computer or computer technology. Appeal Br. 20 (Claims App'x); *see Credit Acceptance Corp. v. Westlake*

*Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017); *see also Alice*, 573 U.S. at 221, 223, 225; *see* Ans. 8.

For example, the claimed "processor" is merely a tool to perform steps (B)–(F). Appeal Br. 20 (Claims App'x). Claim 1, however, does not recite a technological improvement in the processor or how it operates. *Id.* (Claims App'x); *see also* Spec. ¶ 79 (describing a central processor generally). Similarly, the claimed "clinical module," "interoperability engine," and "communication component," each executed by the processor, are software components to implement various recited functions (Appeal Br. 20 (Claims App'x)) rather than a recited improvement in a computer or technology. *See* Spec. ¶¶ 201, 203, Figs. 5, 13–14 (describing and showing clinical module 512 as a tool to implement clinical functions), ¶¶ 92–93 (describing the interoperability engine as tool to implement interoperability functions), ¶ 170, Fig. 5 (describing and showing communication component 534 as a tool for communicating). Moreover, claim 1 does not recite a computer or technological improvement in the recited "integrated medical software system" or "rule-based clinical decision support (CDS) system." The disclosure similarly describes these components as tools to perform steps in claim 1 rather than a technical improvement to these tools. *See id.* ¶¶ 92, 110, Fig. 5 (elements 500, 502). The recited "user interface" is also described generally as a tool to receive input data. *See id.* ¶ 136, Fig. 7 (element 700).

As for the recited "*electronic* clinical document" and a "clinical flag *in* an electronic document" in claim 7 (Appeal Br. 20 (Claims App'x) (emphases added), these recited features merely automate the above-identified abstract idea rather than improve on a computer or a technology.

Appeal Br. 20 (Claims App'x). Thus, when considering the noted, additional elements individually or in combination, they are to no more than using computers as tools to perform the above-identified abstract idea.

To the extent that Appellant contends the recited steps (A)–(G) are an "improvement to a clinical system such that it is interoperable with a rule-based CDS system" (*see* Appeal Br. 17; Reply Br. 7), there is insufficient persuasive evidence on this record to substantiate this contention. Specifically, as noted above, we do not see a specific improvement in the way the recited computer components operate when performing claim 1's steps (B)–(E) (*see* Appeal Br. 13–14, 17) to achieve the noted interoperability between a clinical system and a rule-based CDS system. The Specification fares no better, describing these components in purely functional terms, such as they "serializ[e] . . . the input data into a standardized . . . language," they "translat[e] . . . the serialized input data into a controlled medical vocabulary," they "associate[e] . . . the serialized input data with clinical coding," and they "plac[e] . . . the input data into a first . . . clinical document defined by a clinical document exchange standard specifying the structure and semantics of the first . . . clinical document." *See* Spec. ¶¶ 79, 92, 100–102, 105, 201, Figs. 4–5. But, these mere functions for coding and standardizing data that assist in interoperability are not specific improvements to the way a computer operates or to computer technology. *See Univ. of Fla.*, 916 F.3d at 1368. The recited computer components are essentially tools to implement or provide the disputed interoperability, which can be considered as part of the above-identified abstract idea.

We also are not persuaded by Appellant's arguments that the claimed invention improves a computer's functionality such as in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016). *See* Appeal Br. 17. The *Enfish* court explained that "[t]he Supreme Court has suggested that claims 'purport[ing] to improve the functioning of the computer itself,' or 'improv[ing] an existing technological process' might not succumb to the abstract idea exception." *Enfish*, 822 F.3d at 1335 (citing *Alice*, 573 U.S. at 222–25). The claims in *Enfish* were directed to an improved database configuration that permitted faster searching for data. *See id.* at 1330–33, 1336. In contrast, as previously discussed, claim 1 does not recite an advance in a data structure like *Enfish* that improves on a computer's functionality. *See id.* at 1336–37 (finding a "self-referential table for a computer database" improves computer functionality itself).

To the extent Appellant contends that the claimed invention is eligible because it is necessarily rooted in computer technology or overcomes a problem specifically arising in computers as in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014), we disagree. *See* Appeal Br. 17 (citing *DDR*). Here, providing clinical decision support using an integrated medical system, as claim 1 recites, is not necessarily rooted in, or a problem that arose in, the realm of computer technology as previously explained.

Given the record, claim 1's additional elements beyond the identified judicial exceptions are not shown to improve a computer itself, another technology, or technical field. *See* Revised Guidance, 84 Fed. Reg. at 55 (citing MPEP § 2106.05(a)). Nor do claim 1's additional elements implement the identified judicial exception with or use the judicial exception

in conjunction with a particular machine or a particular transformation. *See id.* (citing MPEP §§ 2106.05(a), § 2106.05(c)).

We add that certain steps in claim 1 may be considered insignificant extra-solution activity. For example, step (A) can be considered insignificant pre-solution data-gathering activity. *See Ultramercial Inc. v. Hulu LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014). Also, step (G) can be considered insignificant post-solution activity that outputs an alert, warning, reminder, and/or recommendation that is merely ancillary to the providing clinical decision support focus of the claimed invention. *See Flook*, 437 U.S. at 590 (finding updating an alarm limit to be insignificant post-solution activity); *see also CyberSource*, 654 F.3d at 1371 (discussing *Flook* and post-solution activity). Thus, steps (A) and (G) do not integrate the judicial exceptions into a practical application for these additional reasons. *See* Guidance, 84 Fed. Reg. at 55 (citing MPEP § 2106.05(g)).

Lastly, Appellant discusses what claims 2, 3, 32, and 33 recite but does not further explain how these claimed features are additional elements to the above-identified judicial exception or improve a computer technology or other technical field. *See* Appeal Br. 18.

For the above-stated reasons, we determine the additional elements recited in claim 1 beyond the judicial exception, whether considered alone or in combination, are not integrated into a practical application.

*Alice Step Two, Step 2B*

Because we determine claim 1 does not integrate the recited judicial exception into a practical application, we need to consider whether the additional elements add a specific limitation or combination of limitations that are not well-understood, routine, or conventional activity in the field.

*See* Revised Guidance, 84 Fed. Reg. at 56. If so, this indicates that an inventive concept may be present. If, instead, the additional elements simply append well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exceptions, this indicates that an inventive concept may not be present. *Id.*

Appellant contends the Examiner failed to provide any evidence that claims' limitations reciting a technical process was ever employed by any clinical system at the time of the present invention, let alone being "well-understood, routine, and conventional" to a skilled artisan. Reply Br. 8 (quoting *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018)). We are not persuaded.

Many of the claim limitations that allegedly recite a technical process on page 8 of the Reply Brief are not *additional* elements *beyond* the abstract idea, but rather are directed to the identified abstract idea as noted previously. *See* Guidance, 84 Fed. Reg. at 56 (instructing that *additional* recited element(s) should be evaluated in *Alice/Mayo* step two to determine whether they (1) add specific limitation(s) that are not well-understood, routine, and conventional in the field, or (2) simply append well-understood, routine, and conventional activities previously known to the industry (citing MPEP § 2106.05(d)). Rather, the "integrated medical software system," "user interface," "processor," "clinical module executed by the processor," "processor," "interoperability engine executed by the processor," "communication component executed by the processor," "electronic clinical document," a "clinical flag in an electronic document," and "rule-based

clinical decision support (CDS) system" are the additional recited elements. Appeal Br. 20 (Claims App'x); *see* Final Act. 6.

The generic computing functionality of the additional recited elements are well-understood, routine, and conventional. For example, components, such as interfaces (e.g., the recited "user interface"), networks (e.g., the recited "communication component"), and databases or data structures (e.g., the recited "module," "engine," "electronic document," and "flag" within the electronic document) are generic computer components that do not satisfy the inventive concept requirement. *See, e.g., Mort. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016). Also, computer components that obtain data and issue automated instructions (e.g., the recited "processor," "clinical module," "interoperability engine," "communication component," "integrated medical software system," and "rule-based" CDS system) are generic computer components performing well-understood, routine, and conventional activities. *See Alice*, 573 U.S. at 225; *see buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (indicating a computer receiving information over a network is a generic computer functionality and not inventive). The Specification also describes components, such as the recited "processor,", "user interface," and computer "system," generically as previously noted. Spec. ¶¶ 78–80, 87; *see* Ans. 8 (citing Spec. 25–27, 29–30, 37–38).

Appellant's reliance on *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016*)* (Appeal Br. 17) is also unpersuasive. The *BASCOM* court determined claims directed to a technology-based solution to filter Internet content overcame existing problems with other Internet filtering systems. Such problems were

overcome by making a known filtering solution—namely a "one-size-fits all" filter at an Internet Service Provider (ISP)—more dynamic and efficient by individualized filtering at the ISP. *BASCOM*, 827 F.3d at 1351. This customizable filtering solution improved the computer system's performance and was found patent-eligible. *See id.* But unlike the filtering improvements in *BASCOM* that added significantly more to its abstract idea, the claimed invention here uses generic computing components to implement an abstract idea.

Appellant's additional reliance on *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) is likewise unavailing. *See* Appeal Br. 17. The *Amdocs* court held that a claim reciting code for enhancing a record was held eligible because the claim involved "an unconventional technological solution (e.g., enhancing data in a distributed fashion) to a technological problem (e.g., massive record flows which previously required massive databases)." *Amdocs*, 841 F.3d at 1300. Although the court recognized that this solution used generic components, the recited enhancing function necessarily required these generic components to operate in an unconventional manner to achieve an improvement in computer functionality. *See id.* at 1300–01.

That is not the case on this record. Although the claimed invention uses conventional computing components that receive and process data, there is no persuasive evidence to show that these generic components operate in an unconventional manner to achieve an improvement in computer functionality like *Amdocs* or *BASCOM*.

Thus, Appellant fails to show sufficiently the recited additional elements in claim 1 add a specific limitation or combination of limitations

that is not well-understood, routine, or conventional activity in the field. For the above reasons, the additional recited elements—considered individually and as an ordered combination—do not add significantly more than the abstract idea to provide an inventive concept under *Alice/Mayo* step two.

*Conclusion*

For the foregoing reasons, Appellant has not persuaded us of error in the rejection of independent claim 1 and claims 2, 3, 6, 7, 21, and 25–42 for similar reasons.

OBVIOUSNESS REJECTION OVER JOHNSON AND HACKER

Claims 1 and 31 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson (US 5,664,109, issued Sept. 2, 1997) and Hacker (US 6,988,075 B1, issued Jan. 17, 2006). *See* Final Act. 13–16. As for independent claim 1, the Examiner finds Johnson teaches many of its limitations. *Id.* at 14–15. Specifically, the Examiner finds Johnson teaches receiving input data having clinical data for a patient (*see id.* at 14 (citing Johnson 6:44–62, Fig. 2)) and its input data is placed into a first electronic clinical document defined by a clinical document exchange standard (*see id.* at 15 (citing Johnson 15:6–19)). The Examiner states that Johnson does not teach communicating the first electronic clinical document to a rule-based CDS system that (1) compares the input data with rules defined by evidence-based medical knowledge and (2) returns at least one clinical flag in an electronic document defined by the clinical document exchange standard based on the comparison. The Examiner relies on Hacker in combination with Johnson to teach these features in concluding that the claim would have been obvious. *See id.* at 15–16 (citing Hacker 11:19–31).

Appellant argues no proper combination of Johnson and Hacker teaches or suggests an electronic document defined by a clinical document exchange standard. *See* Appeal Br. 7. Appellant also argues Johnson does not teach a clinical document exchange standard specifying a document's semantics. *See id.* Appellant further asserts the independent claims recite an integrated medical software system that communicates a first electronic clinical document to a rule-based CDS system such that it enables two-way communication between the clinical module and the CDS system. *Id.* at 9. Appellant argues no proper combination of Johnson and Hacker teaches a clinical document exchange standard that enables the disputed two-way communication. *See id.*

## ISSUES

Under § 103(a), has the Examiner erred in rejecting claim 1 by determining Johnson and Hacker collectively would have taught or suggested

(A) "a first electronic clinical document defined by a clinical document exchange standard specifying the structure and semantics of the first electronic clinical document" ("the clinical document limitation") and

(B)

> Communicating . . . the first electronic clinical document to a rule-based clinical decision support (CDS) system that compares the input data with rules defined by evidence-based medical knowledge and returns at least one clinical flag in an electronic document defined by the clinical document exchange standard based on the comparison

("the clinical flag limitation")?

## ANALYSIS

### *A. The Clinical Document Limitation*

We begin by construing the clinical document limitation of claim 1, which calls for the document to be "defined by a clinical document exchange standard." Appeal Br. 20 (Claims App'x). A claim is given its broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citation omitted). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) ("The ordinary and customary meaning 'is the meaning that the term would have to a person of ordinary skill in the art in question") (citation omitted).

The Specification does not define the term "clinical document exchange standard." *See generally* Spec. At best, the disclosure describes "a uniform clinical document exchange standard, *such as* the Continuity of Care Document (CCD) standard, for specifying the structure and semantics of electronic documents in which data is captured." *Id.* ¶ 95. Our emphasis, however, underscores that this form of a clinical document exchange standard is merely exemplary. One ordinary meaning for "standard" is "something established by authority, custom, or general consent as a model or example: CRITERION" and "something set up and established by authority as a rule for the measure of quantity, weight, extent, value, or quality." *Standard*, The Merriam-Webster Online Dictionary, *available at* https://www.merriam-webster.com/dictionary/standard (defs. 3 and 4) (last visited August 28, 2019). Accordingly, the phrase "clinical document exchange standard," as broadly as recited in claim 1, is a criterion or rule for

exchanging a clinical document that is established by authority, custom, or general consent.

Based on this construction, we agree with the Examiner that Johnson at least suggest the disputed clinical document limitation in claim 1. *See* Final Act. 15; Ans. 4–5. Specifically, the Examiner relies on Johnson's chosen format of a document such that the document is compatible with a subscriber as at least suggesting the clinical document limitation. *See* Final Act. 15 (citing Johnson 15:6–19). To elaborate, Johnson's subscriber selects a document for viewing and transmits a request for the document to a server network (112). *See* Johnson 15:6–8, Figs. 1, 8. Johnson's server network (112), in turn, transmits the document to a client system (114) "in a version (e.g. text or image) and a format *compatible with* that system's display capabilities." *Id.* 15:8–1 (emphasis added). Because Johnson's *transmitted* document is *compatible with* the system's display capabilities (e.g., capabilities establish criteria or rules for displaying) (*see id.*, 15:8–13, Fig. 7 (table 718)), this teaching in Johnson at least suggests the document is defined by a criterion or rule established by some general consent for exchanging the document (e.g., the recited "clinical document exchange standard").

Johnson, then, further suggests the transmitted document (the claimed "first electronic clinical document") is defined by a criterion or rule for exchanging the document that is established by custom or general consent (the claimed "clinical document exchange standard") and specifies a version (the claimed "structure") and format (the claimed "semantics") of the document. *Id.*, 15:6–19. For the above reasons and contrary to Appellant's

contentions (*see* Appeal Br. 7), Johnson at least suggests the clinical document limitation.

*B. The Clinical Flag Limitation*

For the clinical flag limitation, Appellant contends one of ordinary skill in the art would understand the CDS system "returns" the clinical flag to the integrated medical software system because the integrated medical software system performs a function "based on the at least one clinical flag." Appeal Br. 9. Appellant argues, therefore, the clinical document exchange standard provides two-way communication between a clinical module and the CDS system. *See id.* We disagree.

First, claim 1 recites a *communication component* executed by a processor communicates the first electronic clinical document to a CDS system and does not address communication between the CDS and a *clinical module* as argued. *See id.* at 20 (Claims App'x). As broadly as recited, the CDS system *returns* the clinical flag to a component other than the clinical module. *Accord* Final Act. 28 (finding "the claim merely recites returning without specifying the destination. For this reason, two-way communication is not within the scope of the claim.").

Second, regarding the assertion that Johnson's document is not "sufficiently interoperable with a second system such that the second system can compare that data to rules defined by evidence-based medical knowledge, as recited in the claims" (Appeal Br. 8 (bolding omitted)), we are not persuaded. Appellant does not support this assertion with persuasive evidence why Johnson's document would not be interoperable with a second system. *See id.* Moreover, the rejection turns to Hacker in combination with Johnson to teach the feature in the clinical flag limitation related to a

rule-based clinical decision support (CDS) system comparing the input data with rules defined by evidence-based medical knowledge and returning at least one clinical flag. Final Act. 15–16 (citing Hacker 11:19–31). Appellant does not dispute these findings and conclusion related to Hacker, which suggests two-way communication between an integrated medical software system and a rule-based CDS system. *See* Appeal Br. 8–9.

Instead, Appellant alleges features are missing from the references individually rather than considering the proposed combination. *See id.* But, such arguments regarding Johnson's or Hacker's alleged individual shortcoming are unavailing. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Nor do we find availing Appellant's contention that "nothing in H[acker] teaches or suggests that the system is able to check medical records for drug interactions as long as those records are received in a document in 'a format compatible with [that] system's display capabilities.'" Appeal Br. 8 (bolding omitted) (brackets in original). Such a contention is not commensurate with the scope of the claim. *See id.* at 20 (Claims App'x).

For the foregoing reasons, Appellant has not persuaded us of error in the rejection of independent claim 1 and independent claim 31, which recites commensurate limitations.

OBVIOUSNESS REJECTION OVER JOHNSON, HACKER, AND INGLE

Claims 2, 3, 32, and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson, Hacker, and Ingle (US 2002/0138524 A1, published Sept. 26, 2002). *See* Final Act. 17–18.

*Claims 2 and 32*

Appellant does not dispute the rejection of dependent claims 2 and 32, only asserting dependent claims 2 and 32 are patentable based on their dependency to claims 1 and 31. *See* Appeal Br. 10. Because we are not persuaded the rejection of independent claims 1 and 31 are in error, we sustain the rejection of dependent claims 2 and 32.

*Claims 3 and 33*

Claim 3 depends from claim 2 and further recites "the clinical document exchange standard is at least one of the Clinical Document Architecture (CDA) standard, the Continuity of Care Record (CCR) standard, and the Continuity of Care Document (CCD) standard." Appeal Br. 20 (Claims App'x). Based on the record before us, we find error in the Examiner's rejection of dependent claim 3.

The Examiner relies on Ingle's teaching related to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards requiring a discharge summary to teach this claim limitation. *See* Final Act. 18 (citing Ingle ¶¶ 7–8). Appellant argues a JCAHO standard is not a CDA, CCR, or CCD standard. Appeal Br. 10. We agree.

Ingle's Background Section discloses the JCAHO is a quality oversight body for health care organizations and managed care in the United States. Ingle ¶ 7. According to Ingle, the JCAHO's information management (IM) standards IM.7 through IM.7.2 require a discharge summary when a patient is discharged from an accredited facility. Ingle ¶¶ 6, 8. But the Examiner has not sufficiently explained how Ingle's JCAHO's standards at least suggest the recited CDA, CCR, or CCD standard in claim 3.

Additionally, in the Examiner's Answer, the Examiner states "there is nothing [to] prevent any medical system from adopting and interpreting its own CDA standard, and there is no single prevailing CDA standard in the art." Ans. 7. The Examiner provides insufficient evidence to support this statement. *See id*. Moreover, on the record, this explanation does not assist sufficiently in demonstrating how Ingle's standard teaches or suggests the CDA, CCR, or CCD standard recited in claim 3. *See id.*

For the foregoing reasons, Appellant has persuaded us of error in the rejection of dependent claim 3 and dependent claim 33, which recites commensurate limitations.

THE REMAINING OBVIOUSNESS REJECTION

Claims 6, 7, 21, 25–30, and 34–42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson, Hacker, and McIlroy (US 5,583,758, issued Dec. 10, 1996). Final Act. 19–26.

Appellant does not dispute the remaining obviousness rejection, only asserting these claims are patentable based on their dependency from one of claims 1 and 31. *See* Appeal Br. 10. Because we are not persuaded the rejections of independent claims 1 and 31 are in error, we sustain the rejections of dependent claims 6, 7, 21, 25–30, and 34–42.

DECISION

| Claim(s) Rejected | Basis | Affirmed | Reversed |
|---|---|---|---|
| 3, 33 | § 112(b) or § 112 ¶ 2 (pre-AIA) | | 3, 33 |
| 1–3, 6, 7, 21, 25–42 | § 101 | 1–3, 6, 7, 21, 25–42 | |

| | | | |
|---|---|---|---|
| 1, 31 | § 103 Johnson, Hacker | 1, 31 | |
| 2, 3, 32, 33 | § 103 Johnson, Hacker, Ingle | 2, 32 | 3, 33 |
| 6, 7, 21, 25–30, 34–52 | § 103 Johnson, Hacker, McIlroy | 6, 7, 21, 25–30, 34–42 | |
| **Overall Outcome** | | 1–3, 6, 7, 21, 25–42 | |

AFFIRMED