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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 ANCA IOANA DANIELA BUCUR and
RICHARD VDOVJAK[1]

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Appeal 2016-005416
Application 13/499,989
Technology Center 3600

_____

Before CARLA M. KRIVAK, BRADLEY W. BAUMEISTER,
JEREMY J. CURCURI, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's

Final Rejection of claims 1–18 and 20. App. Br. 9–23.[2] We have

jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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STATEMENT OF THE CASE

Appellants describe the present invention as follows:

A system for linking corresponding patient information records is disclosed. A plurality of entities (1, 1a) have respective patient databases comprising patient information records (3, 3a). Each entity (1, 1a) has associated therewith a patient identification algorithm (4, 4a) for matching corresponding patient information records (3, 3a) of the same patient at different entities (1, 1a). A linking subsystem (6) maintains a set of links (7) of a first entity (1) of the plurality of entities (1, 1a). The linking subsystem (6) is arranged for linking patient information records (3) of the first entity (1) with corresponding patient information records (3a) of the other entities (1a). A link (ID, RID, RLoc) is established when a given patient information record (3) of the first entity (1) matches a corresponding patient information record (3a) of another entity (1a) based on the patient identification algorithm (4) of the first entity (1). The links provide an association between locally-assigned patient identifiers (ID, RID) of the same patient at different entities (1, 1a).

Spec., Abstract.

Independent claim 13, reproduced below, illustrates the appealed claims:

13. A computer-implemented method of linking corresponding patient information records at a plurality of facilities, each facility having respective patient databases comprising patient information records, each facility having associated therewith a patient identification algorithm for matching corresponding patient information records of a same patient at different entities, the method comprising:

maintaining, via a microprocessor, a first set of links of a first facility of the plurality of facilities, the first set of links linking patient information records of the first facility with corresponding patient information records of other facilities, a first link of the first set of links being established when a given patient information record of the first facility matches a

corresponding patient information record of another facility, based on a first patient identification algorithm of the first facility, and each link in the set of links representing a facility specific link to the corresponding patient information record of another facility of the plurality of facilities and each link is stored in computer memory;

maintaining, via the microprocessor, a second set of links of a second facility of the plurality of facilities, the second set of links linking patient information records of the second facility with corresponding patient information records of the other facilities, a second link of the second set of links being established when a given patient information record of the second facility matches a corresponding patient information record of another facility, based on a second patient identification algorithm of the second facility, wherein the first patient identification algorithm of the first facility creates the first link and the second patient identification algorithm of the second facility creates the second link;

wherein the first patient identification algorithm of the first facility and the second patient identification algorithm of the second facility are different;

wherein the first link and the second link are different links.

Independent claim 1—the only other independent claim—is presented in system-claim form, but otherwise sets forth language that is substantially similar to that of claim 13.

Claims 1–18 and 20 stand rejected under 35 U.S.C. § 101 as being directed to abstract ideas that constitute patent ineligible subject matter. Final Act. 2–4.

Claims 1–18 and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Lassetter (US 2006/0271401 A1, published Nov. 30, 2006); Grannis, "Privacy and Security Solutions for Interoperable Health Information Exchange—Perspectives on Patient Matching: Approaches,

Findings, and Challenges," June 30, 2009; Stead (US 2006/0287890 A1, published Dec. 21, 2006); and Nafousi (US 2004/0128262 A1, published July 1, 2004).

We review the appealed rejections for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

THE SUBJECT-MATTER-ELIGIBILITY REJECTION

Findings and Contentions

The Examiner concludes that the appealed claims are directed to an abstract idea because claim 1 is directed to the abstract idea of "a plurality of patient identification algorithms that match patient records, wherein each patient identification algorithm is specific to a particular facility, and wherein each patient identification algorithm is distinct." Final Act. 2. The Examiner further explains

> The subject matter of **Claims 1-18 and 20** may be interpreted as comparing new and stored information (i.e. patient information records) and using rules to identify options (i.e. whether or not to link the records using the patient identification algorithm), processing information (i.e. patient information records) through a clearinghouse (i.e. a processor), using categories (i.e. facility specific identification algorithms) to organize, store, and transmit information, organizing information (i.e. patient information records) through mathematical correlations (i.e. patient identification algorithms), and/or a mathematical procedure for converting one form of numerical representation (i.e. a first facility's patient information records) to another (i.e. a second facility's patient information records)—all of these interpretations are deemed abstract ideas.

Id. at 2–3.

Appellants assert the Examiner's analysis of claim 1

> is insufficient in at least that it ignores the sets of independent
> links. The claims are directed to a plurality of facilities with a
> database of patient records having different sets of links stored
> in a computer memory that match patient records of one facility
> to patient records at another facility, wherein each entity applies
> different patient identification algorithms that match patient
> records and each entity as different links.

App. Br. 9–10.

Principles of Law

In determining whether the claims set forth patent eligible subject matter under 35 U.S.C. § 101, we first must determine whether the claims at issue are directed to laws of nature, natural phenomena, or abstract ideas. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014). In considering whether a claim is directed to an abstract idea, we acknowledge, as did the Supreme Court, that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012). We therefore look to whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

If the claims are directed to an abstract idea, we then must consider whether the claim contains an element or a combination of elements that is sufficient to transform the nature of the claim into a patent-eligible application. *Ultramercial*, 772 F.3d at 714; *Alice Corp. Pty. Ltd. v. CLS Bank Int'l.*, 134 S.Ct. 2347, 2355 (2014).

> In applying step two of the *Alice* analysis, we must "determine whether the claims do significantly more than simply describe [the] abstract method" and thus transform the abstract idea into patentable subject matter. We look to see whether there are any "additional features" in the claims that constitute an "inventive concept," thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. Those "additional features" must be more than "well-understood, routine, conventional activity."

Intellectual Ventures I LLC v. Erie Indem. Co., 850 F.3d 1315, 1328 (Fed. Cir. 2017) (citations omitted).

"[C]laims [that] merely require generic computer implementation[] fail to transform [an] abstract idea into a patent-eligible invention." *Id.* (first and fourth alterations in original) (quoting *Alice*, 134 S. Ct. at 2357).

Analysis

We agree with Appellants that the Examiner mischaracterizes the abstract idea to which the claims are directed. Referring to method claim 13 as a clearer example than claim 1, we find the abstract idea being claimed is better characterized as one of multiple owners of respective data collections comparing records of his or her own data collection with records of the other owners' data collections to match records based on one or more facility-independent matching criteria and maintaining links that record matches among the compared database records, wherein each data-collection owner maintains his or her own links. The claimed computer elements aside, humans have performed this type of record comparison and linking for as long as paper records have been kept.

It also was a conventional practice to maintain links representing facility-specific matches. For example, Appellants acknowledge it was a

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common industry practice to provide such computerized links to a master
index:

> The current industry practice is to rely on a master index, e.g. a
> same link, which by linking to the master index, each facility
> agrees on the same patient represented by the master index, and
> agrees to the patient identifiers at each of the other facilities
> linked to the master index.

App. Br. 10. Appellants also acknowledge that it was conventional to create
facility-specific matching links manually and that their invention entails
automating this known manual practice: "The manual review of uncertain
matches helps to minimize linkage errors as they can have far-reaching
consequences, ultimately endangering a patient's health. However,
submitting a large amount of records for manual review is very costly and
may make the entire solution impractical." Spec. 2.[3]

As such, the abstract idea to which the present claims are directed
reasonably can be characterized as "an idea 'of itself.'" *See* FEBRUARY 2018:
ELIGIBILITY QUICK REFERENCE SHEET *IDENTIFYING ABSTRACT IDEAS* (PART 2),
"AN IDEA 'OF ITSELF'" — MPEP 2106.04(a)(2) PART (III) A. Concepts
Relating To Data Comparisons That Can Be Performed Mentally Or Are
Analogous To Human Mental Work (available at https://www.uspto.gov/

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[3] Other types of manual database links that were used commonly prior to the
advent of computers and the internet include (1) grantor-grantee indexes,
which county officials used for linking sellers' and purchasers' names to the
full records of real property deeds or recorded instruments describing the
real estate sales transactions; and (2) legal citators, such as Shepard's®
Citations and Westlaw's Key Cite®, which are distinct linking systems used
to link all legal authorities that cite a particular case, statute, or other legal
authority.

sites/default/files/documents/ieg-qrs.pdf); *see also SmartGene Inc. v. Advanced Biological Laboratories, SA*, 555 Fed.App'x. 950, 955 (Fed. Cir. 2014) (*cited in id.*) (holding that claims reciting routine mental information-comparison and rule-application processes are directed to patent-ineligible abstract ideas).

Furthermore, the present claims' recitation of computer components such as microprocessors (e.g., claim 13) and linking subsystems (e.g., claim 1) do not add additional features or "significantly more" to the abstract idea that would transform the claimed abstract idea into patentable subject matter. The present claims are distinguishable from those at issue in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). *In DDR*, our reviewing court concluded

> [the *DDR* claims] do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.

Id. at 1257.

The present claims, in contrast, do not solve a problem rooted in computer technology or arising in the realm of computer networks. Instead, as acknowledged by Appellants, "[t]he present application addresses a business challenge and a medical challenge of how to effectively and efficiently match patient record[s] at different facilities." App. Br. 12. Appellants' Specification does not identify new computer hardware or identify any steps beyond those that medical professionals routinely and consciously perform. *See SmartGene*, 555 Fed.App'x. 950 at 955. The claims instead involve use of computers, not defined other than by their

function, to perform familiar steps of searching electronic databases and recording links to electronic records. *See id.*

Appellants also argue that the claims are directed to patentable subject matter because "the claims do not 'tie up' databases of patient records, or even the use of a master index with databases of patient records currently used to match patient records across facilities[,]" and "[t]hus, the risk of preemption is minimized." App. Br. 10.

This argument is unpersuasive. We recognize that the Supreme Court has described "the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of pre-emption." *See Alice Corp.*, 134 S. Ct. at 2354. However, characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. As our reviewing court has explained: "The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice Corp.*, 134 S. Ct. at 2354). Although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.*

We, therefore, sustain the Examiner's rejection of claims 1–18 and 20 under 35 U.S.C. § 101 as being directed to abstract ideas that constitute patent ineligible subject matter.

THE ART-BASED REJECTIONS

Claims 1–12, 18, and 20

Appellants argue claims 1–12, 18, and 20 as a group. App. Br. 12–13; Reply Br. 4–5. We treat independent claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that Lassetter generally teaches all of the limitations of independent claim 1 with several exceptions. Final Act. 6–8 (citing Lassetter ¶¶ 17, 19, 24–26, 37, 40, 41, 64–67). For example, the Examiner relies on Grannis for teaching claim 1's limitations of "wherein the first [and second] facility specific patient identification algorithm[s] . . . are different" and "wherein the first link of the first facility and second link of the second facility are different links." *Id.* at 8–9 (citing Grannis 1-1, 1-2, 6-2, 7-10). The Examiner relies on Stead for teaching claim 1's limitation of "wherein the first and second facilities each store their own patient information records on their own separate databases." *Id.* at 8–10 (citing Stead ¶¶ 94, 108, 109). The Examiner relies on Nafousi for teaching claim 1's limitation of "wherein the first and second facilities each store their own algorithms on their own separate databases." *Id.* at 9 (citing Nafousi ¶¶ 7, 70) The Examiner additionally articulates a motivation for one skilled in the art to combine the various teachings. *Id.* at 10 (citing Nafousi ¶ 7).

Appellants note claim 1 recites that "each link of the set of links represents a facility specific match and each link is stored in computer memory." App. Br. 12–13. Appellants contend that none of the four cited references discloses a set of links, which represents facility specific matches. *Id.* at 13. According to Appellants, "Lassetter, Grannis, and Stead disclose a central or master index accessed by a collection of entities. The master

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index is not a facility specific match for each facility. The master index is a
common match for all the facilities." *Id.* Appellants further argue that
Nafousi does not cure this deficiency. *Id.*

Appellants' arguments are unpersuasive. As a threshold matter,
Lassetter discloses that Master Matching Index (MMI) Adapters 18, 20, and
22 are associated with each Health Care Related Entity 12, 14, 16, and reside
on the respective systems of those entities. Lassetter ¶ 21; FIG. 1. Each
"distributed MMI adapter **30** may include a merge/link module **44.**
Merge/link module **44** may be used to merge or link multiple returned
patient records, so that for subsequent queries with the same data, a single
patient record is returned to the associate health care related entity." *Id.*
¶ 37. As such, Lassetter discloses first links of a first facility stored in
computer memory, as well as distinct second links of a second facility stored
in computer memory.

Furthermore, the Examiner relies on Grannis—not Lassetter—for
teaching that the various searches and links may be facility specific.
Ans. 24. Grannis explains that each Health Information Organization (HIO)
or facility may use its own search algorithm. Grannis 7-10 (explaining that
Facility A may search on name, while Facility B may tune its algorithm to
search by social security number). Grannis teaches that although all of the
HIOs' records may be stored in a centralized manner, as an alternative, the
records may be "held in a federated manner—that is, each site provides the
HIO access to its data but stores it locally on its own data servers." *Id.* at 6-
2. Grannis explains that according to the latter architecture, "the HIO pulls
information from multiple sources and sends the provider one overall record
for that patient." *Id.* at 6-3.

The combination of Grannis teaching that individual facilities may use their own search algorithms, combined with Lassetter teaching that the facilities may use their own distinct links, suggests or renders obvious that a given health care entity's links for linking to records in other facilities' databases may be distinct from the separate links that the other facilities respectively maintain. To have common or shared links among the facilities would alternatively result in a first facility maintaining links that are based upon algorithms used exclusively by other facilities, which algorithms the matching system was intentionally designed to have the first facility avoid using.

Appellants also argue that "Grannis discloses 'the need for inter-HIO data exchange will arise,'" and asserts that "Grannis is not a solution or an enabling disclosure, but the expression of a need, which can be addressed by the present application." App. Br. 13 (citing Grannis 7-10). This argument is unpersuasive at least because Appellants point to insufficient evidence to support their position that establishing a system that addresses such a need would be beyond the abilities of one of ordinary skill in the art without exercising undue experimentation. Rather, we are persuaded by the Examiner's findings and reasoning, supported by evidence drawn from the record, that establishing such a system would have been obvious.

Accordingly, Appellants have not established that the cited references fail to render claim 1 obvious.[4] We therefore affirm the obviousness

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[4] Because the combination of Lassetter and Grannis teaches the disputed limitation, we need not consider Lassetter's additional teaching that "[i]f a match is not found [on the Master Matching Index (MMI)], other networks may be queried for the new patient's records." Lassetter ¶ 26.

rejection of that claim, as well as claims 2, 5, 6, 8, 11, and 12, which are not argued separately. *See* App. Br. 12–23. We address the arguments of the remaining claims *seriatim*.

Claims 3, 18, and 20

Appellants argue claims 3, 18, and 20 as a group. App. Br. 14–15; Reply Br. 5–6. Claim 3 reads as follows:

3. The system according to claim 1, wherein the linking subsystem of the second facility links patient information records, of the same patient, located at the second facility with corresponding patient information records, of the same patient, located at a third facility of the plurality of facilities creating a second link of the set of links of the second facility in response to the facility specific patient identification algorithm of the second facility matching the patient information record, of the same patient, located at the second facility with the corresponding patient information record, of the same patient, located at the third facility;

wherein the linking subsystem of the first facility links patient information records, of the same patient, located at the first facility with corresponding patient information records, of the same patient, located at the third facility creating a second link of the set of links of the first facility in response to the facility specific patient identification algorithm of the first facility matching the patient information record, of the same patient, located at the first facility with the corresponding patient information record, of the same patient, located at the third facility; and

wherein the first and second links of the first facility are different links, and the first and second links of the second facility are different links, and the second link of the first facility and the second link of the second facility are different links.

The Examiner concludes that "the limitations of claim 3 *should not* be afforded patentable weight because the recited subject matter . . . is directed towards simple duplication of parts." Final Act. 12. The Examiner reasons

> Claim 3 is directed towards simply producing additional links (i.e., to a third facility using the facility specific algorithms, wherein these elements are previously recited in independent Claim 1. The addition of the third facility does not produce any unexpected results or alter the functioning of the system in any way, shape or form, other than to produce additional links, in the same manner as previously recited in Claim 1.

Id. at 12–13.

Appellants contend that "[n]one of the references discloses sets of links with a created second link in a set for a same patient, each to different facilities, and [wherein] the links are different." App. Br. 14. Appellants argue that "all [of the cited references] rely on a centralized matching, linking to a common location or entity with the master index matching." *Id.* at 14–15. Appellants argue why Stead and Nafousi do not cure the deficiencies of Lassetter and allege that "Grannis is not asserted [by the Examiner] and does not cure the deficiencies of Lassetter, Stead and Nafousi." *Id.* at 15.

As a threshold matter, although the Examiner initially states that the limitations of claim 3 should not be given patentable weight (Final Act. 12), the Examiner's subsequent discussion of the duplication-of-parts doctrine (*id.* at 12–13) renders the record reasonably clear that the Examiner did, in fact, afford the claim language patentable weight. The Examiner then found that the fully considered additional claim language did not render claim 3 patentable because the language merely sets forth an obvious duplication of parts.

Turning to the merits, Appellants arguments are unpersuasive because contrary to their assertion (App. Br. 15), the Examiner does rely upon Grannis in finding that the cited art teaches different links. *See, e.g.,* Final Act. 12 (citing Grannis 1-1, 1-2, 6-2, 6-3, and 7-10)).

Claim 4

Claim 4 reads as follows:

> 4.   The system according to claim 1, wherein at least the first facility locally stores a copy of at least a sub-set of the corresponding patient information records, of the same patient, located at the second facility of the plurality of facilities, and the facility specific patient identification algorithm of the first facility employs the locally stored copy to match the patient information records from the second facility.

The Examiner finds that Stead teaches the additional language of claim 4. Final Act. 13 (citing Stead ¶¶ 94, 108, 109); Ans. 26 (citing Stead ¶¶ 94, 107, 108). Appellants contend that Stead's disclosure of plural vaults of patient data in each data source "is not a sub-set of the data from another facility. At best it is multiple sub-sets of data within the same facility." App. Br. 15.

Appellants' arguments are persuasive. The cited portions of Stead upon which the Examiner relies are directed to an aspect of Stead's invention in which the various healthcare entities provide a single copy of their patient records for storage at a common regional databank 1000. *See, e.g.,* Stead ¶¶ 104, 105. The cited passages and associated discussion of Stead do not set forth additionally that instead of maintaining a single copy of all of the facilities' records at a single central location, a healthcare facility can make multiple copies of its patient records and distribute these copies to each of the other facilities.

Because the rejection is based upon the theory that Stead teaches the disputed claim language, we do not sustain the obviousness rejection of claim 4. We do not reach the distinct question of whether the cited art renders it obvious to combine or modify the references' teachings in order to arrive at the disputed claim language wherein multiple copies of the records are made, and a copy is stored at each facility instead of at a central facility.

Claim 7

Claim 7 reads as follows:

> 7.   The system according to claim 1, wherein each link is a single directional match from a local patient identification to a remote patient identification between the facility and a remote facility and includes the local patient identification, a remote facility identification, and the remote patient identification.

As discussed above in the analysis of independent claim 1, the combination of Lassetter and Grannis teaches at least facility-specific links to patient records that are stored in a federated manner among the various health facilities. The Examiner relies upon Lassetter for teaching that "each link is a single directional match from a local patient identification to a remote patient identification." Final Act. 17; Ans. 26. The Examiner explains that each of Lassetter's links may be interpreted as being "single directional" "because each facility uses a different matching algorithm to determine whether or not there is a match." Ans. 26.

Appellants argue that "Lassetter does not disclose a link [that] includes a remote facility identification because [Lassetter's] master index is not a facility." App. Br. 17. This argument is unpersuasive because, as explained in relation to claim 1, the rejection of claim 7 also is based upon the combination of Lassetter and Grannis, with Grannis teaching the links may be to remote facilities. Ans. 24.

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Appellants argues in their Reply Brief,

> The Answer appears to assert on page 26, that the link is unidirectional because a link at a second facility does not exist. Claim 1 calls for links for both the first and second facility, and therefore they must exist. If both exist as required, then the assertion must fail.

Reply Br. 7.

This argument is unpersuasive because it misinterprets the Examiner's position. We understand the Examiner's position to be that because the facilities use unique matching algorithms, a given facility's links must be one directional—to the remote facility record. This is because if the local facility link recognized additional links from remote facilities' records back to the local facility records (i.e., if plural facilities' links were aggregated or bidirectional), the system would not be able vary the record matching based on the parameters of the individual matching algorithms. Bidirectional links would mean that the links are uniform across the facilities.

Appellants additionally argue that Stead does not cure the deficiencies of Grannis and Lassetter for the following reasons:

> Stead discloses in [0124] a *regional databank* [that] supports the HL7 Clinical Document Architecture, where the electronic patient chart uses the architecture that defines a header including a name of the document, the source or author of the document, the facility, the patient and the date and time. A document header, which includes the facility and the patient is not a link that includes the local patient identification, a remote facility identification, and the remote patient identification. If the facility is interpreted to be the remote facility identification, and the patient name as the remote patient identification, then the local patient identification is missing, and the link is not valid.

App. Br. 17–18.

This argument is unpersuasive. Appellants appear to be equating Stead's header with the claimed link. We understand the Examiner's position instead to be that the combination of Lassetter and Grannis are relied upon for teaching facilities using respective directional links, and that Stead is relied upon additionally merely to teach the type of information that the Lassetter-Grannis links use for performing the matching.

Claims 9 and 10

Appellants argue claims 9 and 10 together as a group. App. Br. 18–19. Claim 9 reads as follows:

> 9. The system according to claim 1, wherein the facility specific patient identification algorithm of the first facility and facility specific patient identification algorithm of the second facility match[]patient demographic data differently by at least one of an attribute and a weight of an attribute.

The Examiner finds that "[Lassetter] matches patients based on a patient's name, gender and date of birth (i.e., demographics)" (Final Act. 16 (citing Lassetter ¶ 40)) and that Grannis teaches "[e]ach facility may have a different matching algorithm" (*id.* (citing Grannis 1-1, 1-2, 6-2, 7-10)).

Appellants contend that "Lassetter does not include, suggest, or imply algorithms, which match differently by at least one of an attribute or a weight" (App. Br. 18) and that Grannis does not cure this deficiency (*id.* at 19).

Appellants' argument is unpersuasive. We understand the Examiner's position to be that because matches are based on attributes of the demographic data and because different facilities may use different matching algorithms, by definition, the respective facility-specific algorithms necessarily have to possess differences in at least one of either the

demographic data's attributes or weight assigned to the attributes. Appellants have not reasonably explained how the matches performed by the combination of Lassetter and Grannis can differ by facility if the respective facilities' algorithms do not vary at least one of the attributes or the weight of attributes.

Claims 13–17

Appellants argue the following in relation to independent claim 13:

> None of the references discloses a set of links, which represent facility specific matches of corresponding patient information records at other facilities. Lassetter, Grannis, and Stead disclose a central or master index accessed by a collection of entities. The master index is not where each facility has a set of links, each link to another facility. Nafousi does not disclose sets of links and does cure the deficiencies of Lassetter, Grannis, and Stead.

> Independent claim 13 further recites ***wherein the first link and the second link are different links.*** In the master index, each link to the master index of the corresponding patient information record is the same link. This makes clear the master index is not recited in the limitation.

App. Br. 19–20.

These arguments are unpersuasive for the reasons set forth above in relation to the discussion of independent claim 1.

Claims 15 and 16

Claim 15 reads as follows:

> 15. The computer-implemented method according to claim 13, wherein the set of links of the first facility and the patient identification algorithm of the first facility are located in computer hardware memory at the first facility.

Claim 16 depends from claim 15.

Appellants argue in relation to claims 15 and 16 that "Nafousi does not disclose, suggest, or imply a patient specific algorithm or a set of links. Thus Nafousi does not disclose all the limitations of claim 15. Lassetter, Grannis, and Stead are not asserted and do not cure the deficiencies of Nafousi." App. Br. 20.

This argument is unpersuasive. As discussed previously, the Examiner relies on the combination of Lassetter and Grannis for teaching the patient identification algorithm that is *used* by the first facility. *E.g.*, Ans. 24. The Examiner relies on Nafousi merely for teaching that the patient identification algorithm taught by the cited combination also may be *stored* specifically at the first facility. Final Act. 18. Appellants do not challenge this finding.

Claim 16, which depends from claim 15, sets forth similar requirements, but in relation to the *second* facility. Appellants present similar arguments for claim 16 as for claim 15. App. Br. 21. For these reasons set forth by the Examiner (*see* Final Act. 18) and discussed above in relation to claim 15, we likewise sustain the rejection of claim 16.

Claim 18

Claim 18 reads as follows:

> 18.   The system according to claim 3, wherein each link in the set of links includes a local patient identification, a remote facility identification, and a remote patient identification; and the remote facility identification identifies one of the plurality of facilities.

Appellants present substantially the same arguments in relation to claim 18 as they present in relation to claim 7. App. Br. 21–22. We sustain the obviousness rejection of claim 18 for the reasons set forth above in relation to claim 7.

Claim 20

Claim 20 reads as follows:

20. The system according to claim 3, wherein the facility specific patient identification algorithm of the first facility matches the patient identification records between the patient information record of the same patient of the second facility and the patient record of the same patient of the third facility with at least one of a different threshold for acceptance and different weighted attributes.

The Examiner explains that Lassetter is relied upon for teaching facility-specific matching algorithms, and Grannis is relied upon for reaching that matching algorithms may be different for each facility. Ans. 27 (citing Lassetter ¶¶ 17, 24–26; Grannis 1-1, 1-2, 6-2, 7-10). Specifically, the Examiner finds that "Lassetter further teaches assigning a threshold value to the matching of the data, to determine whether or not a data element should be considered a match." *Id.* (citing Lassetter ¶ 47).

The Examiner relies on Stead for "teach[ing] that 'the matching algorithm uses [patient data elements] with <u>different weights</u> to determine the match probability.'" *Id.* (citing Stead ¶ 106). The Examiner concludes that "the weighting of data elements as taught by Stead, combined with the matching threshold as taught by Lassetter, and the different, facility-specific matching algorithms as taught by Lassetter and Grannis teach each and every feature of **Claim 20**." *Id.* at 27–28.

Appellants contend

Lassetter is now asserted in [0047], which discloses a probabilistic matching method where a variety of techniques shown in [0045]. Each case or instance of the matching is tallied and if the final tally exceeds a given threshold that a match

occurs. Lassetter does not disclose where the given threshold varies by MMI adapter.

Reply Br. 7. Restated, Appellants contend that Lassetter does not teach varying the first facility's matching algorithm threshold depending on whether the first facility is matching records of the second facility or of the third facility.

Appellants' arguments are persuasive. The combination of Lassetter and Grannis teaches a system that employs facility-specific patient identification algorithms. That is, the matching algorithm used by one facility may differ from the matching algorithm used by another facility. But the passages cited by the Examiner do not appear to teach that the facility-specific patient identification algorithm may include thresholds that are specific to the health facility for which records are being searched. Stated another way, the cited passages do not teach that the algorithm a first facility uses to search the database of a second facility can be different from the algorithm that the first facility uses to search the database of a third facility. *See* Spec. 16, ll. 21–23 (reciting that each site may "[m]atch the demographics of patients at own site against the demographics of the patients at the remote sites, using own algorithms, weights and thresholds for matching (all these can be different for each pair of sites)").

Accordingly, we do not sustain the obviousness rejection of claim 20.

CONCLUSIONS

We sustain the rejection of claims 1–18 and 20 under 35 U.S.C. § 101 for being directed to patent ineligible subject matter.

We sustain the rejections of claims 1–3 and 5–18 as being unpatentable under 35 U.S.C. § 103.

We do not sustain the rejections of claims 4 and 20 as being
unpatentable under 35 U.S.C. § 103.

DECISION

The Examiner's decision rejecting claims 1–18 and 20 is affirmed.

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

AFFIRMED