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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HIROYUKI ITAGAKI and TAKASHI NISHIHARA

Appeal 2015-002702
Application 12/598,168¹
Technology Center 3600

Before HUBERT C. LORIN, BIBHU R. MOHANTY, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

DECISION ON REQUEST FOR REHEARING

The Appellants filed a "Rehearing Request" pursuant to 37 C.F.R.
§ 41.52 of the Decision on Appeal.²

In the Decision on Appeal, the Board

¹ The Appellants identify Hitachi Medical Corporation as the real party in interest. Req. 4.

² This "Decision on Request for Rehearing" references the Appellants' Rehearing Request ("Req.," filed Feb. 27, 2017) and the Decision on Appeal ("Dec.," mailed Dec. 30, 2016).

1. reversed the rejection of claims 1–8, 10, 11, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Giger,³ Perren,⁴ and Hayashi⁵;
2. reversed the rejection of claims 9 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Giger, Perren, Hayashi, and Schmitz⁶; and
3. newly rejected claims 1–11 and 13–15 under 35 U.S.C. § 101 as being directed to judicially-excepted subject matter.

The Request seeks reconsideration only of the Board's decision newly rejecting claims 1–11 and 13–15 under 35 U.S.C. § 101.

DISCUSSION

The panel entered a new ground of rejection of claims 1–11 and 13–15 under 35 U.S.C. § 101 pursuant to 37 C.F.R. § 41.50(b), which provides that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." *See* Dec. 8. Accordingly, the Board did not make a final determination but rather raised a new question of patent-eligibility. We have carefully reviewed the arguments set forth in the Request for Rehearing but for the following reasons they do not persuade us not to raise the question.

³ Giger, US 2001/0043729 A1, published Nov. 22, 2001.

⁴ Perren, US 2003/0004518 A1, published Jan. 2, 2003

⁵ Hayashi, US 2002/0013524 A1, published Jan. 31, 2002

⁶ Schmitz, US 2002/0087071 A1, published July 4, 2002

Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014) identifies a two-step framework for determining whether claimed subject matter is judicially-excepted from patent eligibility under § 101.

Step one.

According to *Alice* step one, "[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept," such as an abstract idea. *Alice*, 134 S. Ct. at 2355. We stated: "Taking claim 1 as representative of the claims on appeal, the claimed subject matter is directed to classification. Classification is a building block of human ingenuity. As such the classification concept is an abstract idea." Dec. 4.

The Appellants' arguments challenging our determination under *Alice* step one are set forth on pages 13–18 of the Request (in the section entitled "[IV.] **B. PRESENT CLAIMS ARE NOT DIRECTED TO AN ABSTRACT IDEA**").

The Appellants begin by arguing that "as pointed out by the Federal Circuit in *Enfish* [*Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016)], 822 F.3d at 1327 (Fed. Cir. 2016), the required inquiry under Section 101 is whether, considered in light of the specification, each *claim as a whole* is directed to excluded subject matter." Req. 13. That is correct.

The "directed to" inquiry

The "directed to" inquiry cannot simply ask whether the claims involve a patent-ineligible concept, "[f]or all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena,

or abstract ideas." *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012). Rather, the "directed to" inquiry applies a stage-one filter to claims, considered in light of the Specification, based on whether "their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015); *see Genetic Techs. Ltd. v. Merial L.L.C.*, 2016 WL 1393573, at *5 (Fed. Cir. April 8, 2016) (inquiring into "the focus of the claimed advance over the prior art"); *Enfish*, 822 F.3d at 1335. "In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole." *Diamond v. Diehr*, 450 U.S. 175, 188 (1981). The question is whether the claims as a whole "focus on a specific means or method that improves the relevant technology" or are "directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016).

Like the Decision, the Request focuses on claim 1. No other claim is discussed.

However, in the section entitled "**III. SUMMARY OF CLAIMED SUBJECT MATTER**" the other independent claim on appeal, claim 11, is mentioned and reproduced (as is claim 1). *See* Req. 8. We likewise reproduce claim 11, side-by-side with claim 1.

<p>1. A magnetic resonance imaging apparatus comprising:</p> <ul style="list-style-type: none">an image acquisition unit configured to divide an imaging region of an object to be examined into a plurality of stations of respective station positions, and acquire a plurality of images having different image types for each station, while moving a table on which the object is mounted, station by station;a display control unit configured to display the plurality of images in a predetermined display format; anda classification processing unit configured to classify the plurality of images by image types and station position, based on imaging condition including imaging parameters, <p>wherein the display control unit displays the plurality of images by image types in spatial order of station positions, based on the classification result by the classification processing unit.</p>	<p>11. An image classification method using a magnetic resonance imaging apparatus, the image classification method including:</p> <ul style="list-style-type: none">an image acquisition step of dividing an imaging region of an object to be examined into a plurality of stations of respective station positions, and acquiring a plurality of images having different image types for each station amongst the plurality of stations of respective station positions, while moving a table on which the object is mounted, station by station;an image type classification step that classifies the plurality of images by image types and station position, based on imaging condition including imaging parameters; anda display step that displays the plurality of images in a predetermined format by the image types in spatial order of station positions, based on the classification result of the image type classification step.
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Only claim 1 was reproduced in the Decision. We stated that it was "illustrative of the subject matter on appeal." Dec. 2. We "[took] claim 1 as representative of the claims on appeal" (Dec. 4) in establishing that "[c]laims 1–11 and 13–15 are [to] be rejected under 35 U.S.C. § 101 as being directed to judicially-excepted subject matter" (Dec. 4).

We stated later in the Decision that "[t]he other independent claim — method claim 11 parallels claim 1 — similarly covers claimed subject matter that is judicially-excepted from patent eligibility under § 101." Dec. 7.

Accordingly, the Board's position with respect to the question of patent-eligibility under § 101 for the subject matter of claim 11 is similar to the one more fully discussed in the Decision with respect to claim 1.

However, although claims 1 and 11 are similar in that they both involve a multi-station MRI and "classif[y] [a] plurality of images by image types and station position, based on imaging condition including imaging parameters," they are not of identical scope.

Claim 1 recites an MRI apparatus while claim 11 more broadly recites a method of "using" it. Claim 1 recites three units ("image acquisition," "display control," and "classification processing") of a magnetic resonance imaging [MRI] apparatus configured to perform certain functions. On the other hand, claim 11 recites "[a]n image classification method *using* a magnetic resonance imaging apparatus" including three steps ("image acquisition," "image type classification," and "display"). Unlike claim 1, claim 11 does not link any of the recited steps to a unit of an MRI. Claim 11 calls for *using* an MRI for an "image classification method" but it includes no limitation requiring the MRI to perform every one of the three recited

steps. Therefore, for example, while claim 1 requires "*a classification processing unit* configured to classify the plurality of images by image types and station position, based on imaging condition including imaging parameters," claim 11's "image type classification step that classifies the plurality of images by image types and station position, based on imaging condition including imaging parameters" does not.

As a result of claim 11's broader scope, the Board takes a stronger position on the patent-ineligibility of claim 11. For claim 1 we stated that "[t]he 'unit' [of claim 1] as claimed performs a classification that, apart from the particular context within which it is placed, *could be performed* mentally or manually" (Dec. 6 (emphasis added)). But one *can* manually "classif[y] [a] plurality of images by image types and station position, based on imaging condition including imaging parameters" (claim 11). Consequently, we take a firmer position that claim 11 covers judicially-excepted subject matter and thus is patent-ineligible under § 101.

Consistent with the Request and the Decision, we will continue to focus on claim 1. We recognize that claim 1 recites an apparatus rather than, per claim 11, a method. However, as the above side-by-side comparison shows, the subject matter difference between claims 1 and 11 is insubstantial, except that claim 11 is broader in scope. Both involve a multi-station MRI and "classif[y] [a] plurality of images by image types and station position, based on imaging condition including imaging parameters." The "directed to" inquiry requires considering claims in light of the Specification, based on whether "their character as a whole is directed to excluded subject matter." *Internet Patents Corp.*, 790 F.3d at 1346. In this

case, it does not matter which independent claim we choose to represent the claimed subject matter because their character as a whole are the same. *Cf. Alice*, 134 S. Ct. at 2360:

The method claims recite the abstract idea implemented on a generic computer; the system claims recite a handful of generic computer components configured to implement the same idea. This Court has long "warn[ed] ... against" interpreting § 101 "in ways that make patent eligibility 'depend simply on the draftsman's art.' " *Mayo, supra*, at —, 132 S.Ct., at 1294 (quoting *Flook*, 437 U.S., at 593, 98 S.Ct. 2522); see *id.*, at 590, 98 S.Ct. 2522 ("The concept of patentable subject matter under § 101 is not 'like a nose of wax which may be turned and twisted in any direction ... ' "). Holding that the system claims are patent eligible would have exactly that result.

Because petitioner's system and media claims add nothing of substance to the underlying abstract idea, we hold that they too are patent ineligible under § 101.

Claim 1 is drawn to a magnetic resonance imaging [MRI] apparatus, reciting three units ("image acquisition," "display control," and "classification processing") configured to perform certain functions.

We stated in the Decision (albeit with respect to step two of the *Alice* framework):

Claim 1 describes a multi-station MRI, comprising an image acquisition unit, a display control unit, a classification processing unit. Each unit is "configured" to perform certain functions. Notwithstanding, that no "unit" claimed is structurally limited, e.g., there is no requirement that the multi-station MRI as a whole or any "unit" of it be computer-implemented, the multi-station MRI as claimed is generic. Claim 1 apparatus is a typical multi-station MRI. Any multi-station MRI available at the time the application was filed would have satisfied this. The Specification supports that view. *See Spec. para 2* ("Among magnetic resonance imaging

apparatuses (hereinafter referred to as MRI apparatuses), there is a kind comprising the multi-station imaging method which performs imaging "). See Spec., para. 12.

Dec. 5–6.

The Request nowhere disputes the Board's finding that the claim 1 apparatus is broadly drawn to conventional multi-station MRIs.

The image acquisition unit of the claimed apparatus is also conventional. It is required to be "configured to divide an imaging region of an object to be examined into a plurality of stations of respective station positions, and acquire a plurality of images having different image types for each station, while moving a table on which the object is mounted, station by station." Claim 1. But the Appellants show typical images obtained from a conventional multi-station MRI that necessarily require an image acquisition unit that functions as claimed. *See* the discussion at Req. 14–15.

The claim as a whole is aimed instead at classifying the acquired images and then displaying them in the resulting classification. *Cf.* Req. 17 ("the present claim 1 is directed to an improved approach in multi-station MRI including *classifying plural MRI images by image types and station position, based on imaging condition including imaging parameters, and displaying the plural images by image types in spatial order of station positions, based on the classification result.*")

Accordingly, the focus of claim 1 as a whole is on classifying images acquired via conventional multi-station MRIs and displaying them according to the classified result.

The abstract idea step of the inquiry calls upon us to look at the focus of the claimed advance over the prior art to determine if the claim's

"character as a whole is directed to excluded subject matter." *Enfish*, 822 F.3d at 1335 (quoting *Internet Patents Corp.*, 790 F.3d at 1346).

In that regard, the Specification provides a section entitled "Problems to be Solved" (Spec. page 3) which states

In the multi-station imaging method, when a plurality of images are read in to be synthesized or compared, classification of images is a crucial technique from the viewpoint of improving operability since the images of a plurality of image types and stations need to be classified.

Spec. para. 8. The Specification states that the prior art "only discloses the user interface for displaying a plurality of station images simply by sequence, station or slice in a predetermined display order, and the algorithm for classifying the plurality of images is not taken into consideration." (Spec. para. 9 (emphasis added)).

The objective of the present invention is to provide an MRI apparatus capable of classifying a plurality of images obtained by multi-station imaging, considering the above-described circumstance.

Spec. para. 10.

In the conventional method for classification and rearrangement of images, "[t]he unclassified images had been manually rearranged by an operator in the conventional method. . . . The conventional method of classification and rearrangement had been carried out by repeatedly executing the above-mentioned procedure until image type which is necessary for diagnosis is displayed." Spec. para. 30.

[0031] Such manual method of classification and rearrangement of images becomes a heavy burden for the operator especially in the case of using the multi-station imaging method for imaging a wide region of an object or the case of juxtaposing

and displaying the images of a plurality of image types, since great number of images need to be classified and rearranged. Therefore, it is desirable that the MRI apparatus executes the classification and rearrangement of images automatically for the purpose of reducing the workload of the operator.

[0032] The classification of the plurality of images obtained by the multi-station imaging method and the rearrangement of the images thereof using the classification result related to the present invention will be described below. First, the algorithm for achieving classification of the reconstruction images or calculation image (hereinafter referred to as automatic classification algorithm) will be described.

The classification process is then further described, exemplified by two "embodiment[s] of automatic classification algorithm[s]" (Spec. paras. 35 and 57).

In light of the Specification's description of the problem and solution, the advance over the prior art by the claimed invention is automatic classification. This is the heart of the invention. *Cf. Intellectual Ventures I LLC v. Erie Indemnity Company*, 850 F.3d 1315, 1328 (Fed. Cir. 2017) ("the heart of the claimed invention lies in creating and using an index to search for and retrieve data . . . an abstract concept.")

However, notwithstanding the advance over the prior art is *automatic* classification, claim 1 is not so limited. Claim 1 calls for

a classification processing unit configured to classify the plurality of images by image types and station position, based on imaging condition including imaging parameters,

wherein the display control unit displays the plurality of images by image types in spatial order of station positions, based on the classification result by the classification processing unit.

Neither unit is required to perform its function automatically. *See Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013) (admonishing that "the important inquiry for a § 101 analysis is to look to the claim"; "the complexity of the implementing software or the level of detail in the specification does not transform a claim reciting only an abstract concept into a patent-eligible system or method.")

Accordingly, given the focus of claim 1 as a whole is on classifying images acquired via conventional multi-station MRIs and displaying them according to the classified result, and given that, in light of the Specification, the heart of the invention is (automatic) classification, the claims are properly characterized as being "directed to" classification (*cf.* Dec. 4 ("classification")) or "more particularly *image* classification" (Dec. 5).

We now turn to the question of whether image classification to which claim 1 is "directed to" is a patent-ineligible abstract idea. In that regard, we look to other decisions for guidance. *See Amdocs (Israel) Limited v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016):

Instead of a definition [for what an "abstract idea" encompasses], then, the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided. *See, e.g., Elec. Power Grp.*, 830 F.3d at 1353–54.[] That is the classic common law methodology for creating law when a single governing definitional context is not available. *See generally* Karl N. Llewellyn, *The Common Law Tradition: Deciding Appeals* (1960). This more flexible approach is also the approach employed by the Supreme Court. *See Alice*, 134 S. Ct. at 2355–57.

In that regard, *In re TLI Communications LLC Patent Litigation*, 823 F.3d 607, 613 (Fed. Cir. 2016) is relevant. The court found there that "representative claim 17⁷ is drawn to the concept of *classifying an image* and storing the image based on its classification." *Id.* at 611 (emphasis added).

While claim 17 requires concrete, tangible components such as "a telephone unit" and a "server," the specification makes clear that the recited physical components merely provide a generic environment in which to carry out the abstract idea of classifying and storing digital images in an organized manner. And the specification's emphasis that the present invention "relates to a method for recording, communicating and administering [a] digital image" underscores that claim 17 is *directed to an abstract concept*.

Id. (emphasis added).

Although *TLI* does not expressly discuss displaying, displaying per se is an abstract idea. *Cf. Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) ("merely presenting the results of abstract processes of collecting and analyzing information, without more (such as

⁷ 17. A method for recording and administering digital images, comprising the steps of:

recording images using a digital pick up unit in a telephone unit,
storing the images recorded by the digital pick up unit in a digital form as digital images,
transmitting data including at least the digital images and classification information to a server, wherein said classification information is prescribable by a user of the telephone unit for allocation to the digital images,
receiving the data by the server,
extracting classification information which characterizes the digital images from the received data, and
storing the digital images in the server, said step of storing taking into consideration the classification information.

identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.") When "[t]he focus of the asserted claims" is "on collecting information, analyzing it, and displaying certain results of the collection and analysis," the claims are directed to an abstract idea. *Id.* at 1343. Combining displaying the classified result with classifying images does not make the combination any less abstract. *Cf. Shortridge v. Found. Constr. Payroll Serv., LLC*, No. 14-CV-04850-JCS, 2015 WL 1739256 (N.D. Cal. Apr. 14, 2015), *aff'd*, No. 2015-1898, 2016 WL 3742816 (Fed. Cir. July 13, 2016).

Given these prior cases, it is appropriate to characterize the image classification concept to which claim 1 is "directed to" as an abstract idea. Accordingly, under step one of the *Alice* framework, we determine that claim 1 is directed to an abstract idea.

The Appellants argue that

claim 1 of the present application is directed to *an improved approach in multi-station magnetic resonance imaging (MRI) to display images having different image types to an operator. Similar to the claims in Enfish which the Federal Circuit found not to be directed to an abstract idea, the present claims are directed to an improvement of an existing technology (here, MRI image display control).*

Req. 13 (emphasis added).

The "improved approach" that claim 1 is said to be directed to is difficult to discern. Claim 1 seeks to "classify the plurality of images by image types and station position, based on imaging condition including imaging parameters" and then "display[] the plurality of images by image types in spatial order of station positions, based on the classification result by the classification processing unit." These limitations describe the

classification result that is intended to be achieved. These limitations provide no insight into the mechanism by which the (conventional) multi-station MRI achieves said described classification result. The mechanism responsible for achieving that particular result is insufficiently claimed to support a determination that, under *Alice* step one, the claimed subject matter is directed to "an improved approach in multi-station [MRI]" (Req. 13) rather than image classification. *Cf. Credit Acceptance Corp. v. Westlake Services, LLC*, 2017 WL 2485469, *10, No. 2016-2001 (Fed. Cir. June 9, 2017):

Significantly, the claims do not provide details as to any non-conventional software for enhancing the financing process. *See Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) (explaining that "[o]ur law demands more" than claim language that "provides only a result-oriented solution, with insufficient detail for how a computer accomplishes it"); *Elec. Power Grp.*, 830 F.3d at 1354 (explaining that claims are directed to an abstract idea where they do not recite "any particular assertedly inventive technology for performing [conventional] functions").

As evidence that claim 1 is "[s]imilar to the claims in *Enfish* which the Federal Circuit found not to be directed to an abstract idea [in that] the present claims are directed to an improvement of an existing technology (here, MRI image display control)" (Req. 13), the Appellants illustrate three different arrangements in which images obtained by a three-station MRI can be displayed. Req. 14–16.

The Specification (Fig. 2, reproduced below) discloses a typical multi-station MRI sequence whereby images of different types are obtained at each station.

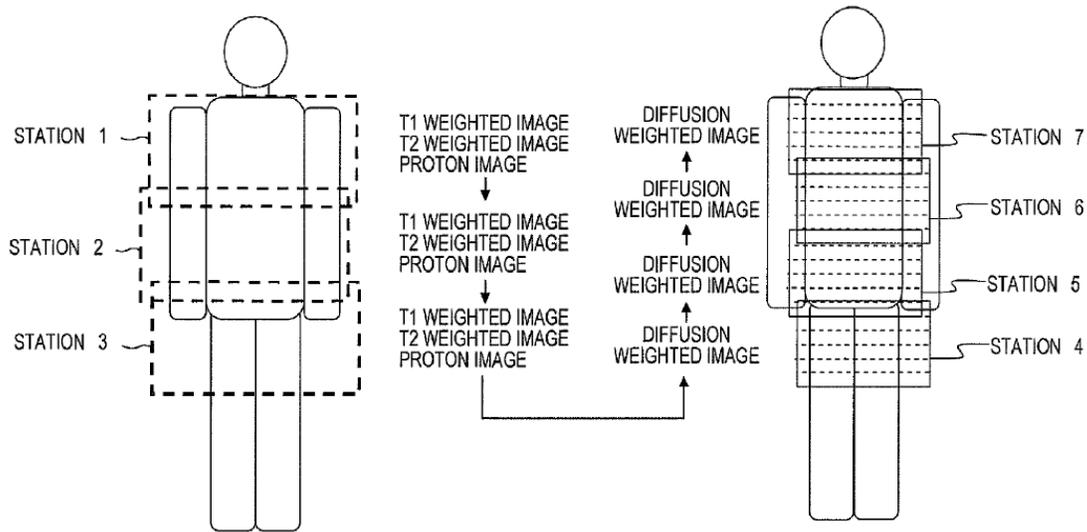
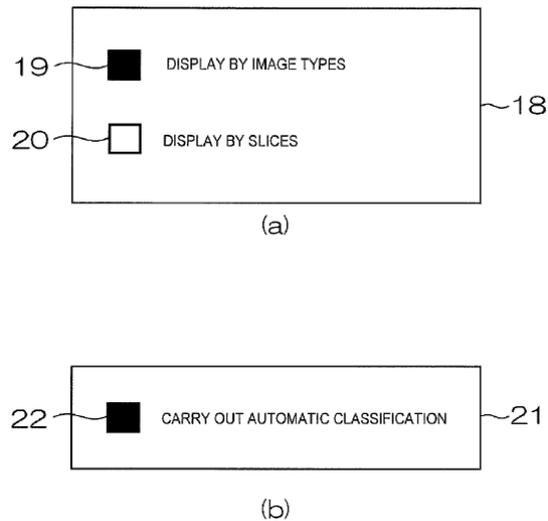


Fig. 2 of the Specification "shows the imaging order in the whole-body MRI" (Spec. para 14).

The Specification further discloses

in the case that "display by image types" of the screen display in Fig. 8 (a) [reproduced below] is highly prioritized, the present invention may be set as applicable under the condition of the display by slices, by making it possible to select the display by slices which displays the images from the vertex to the lower extremity in the vertical direction and the multi-slice images of the specified image type in the lateral directions.

Spec. para 14.



"Fig. 8 is an example of a screen for selecting automatic classification functions of a whole-body MRI." Spec. para. 14.

Thereby, the Specification discloses a multi-station MRI for obtaining images of a subject at different slices, each slice having a corresponding set of different image types (Proton (P-W), T1-weighted (T1-W), and T2-weighted (T2-W)).

In the Request, the Appellants illustrate results of scanning a subject's torso, abdomen, and legs via a three-station multi-station MRI (i.e., Station 1, Station 2, Station 3, respectively) in the manner the Specification discloses. Req. 14–16. Given three slices (Slice-1; Slice-2; and, Slice-3), 27 images could be obtained. Here is a list:

1. Station 1 (torso), Slice 1, P-W
2. Station 1 (torso), Slice 1, T1-W
3. Station 1 (torso), Slice 1, T2-W
4. Station 1 (torso), Slice 2, P-W
5. Station 1 (torso), Slice 2, T1-W
6. Station 1 (torso), Slice 2, T2-W
7. Station 1 (torso), Slice 3, P-W
8. Station 1 (torso), Slice 3, T1-W
9. Station 1 (torso), Slice 3, T2-W

10. Station 2 (abdomen), Slice 1, P-W
11. Station 2 (abdomen), Slice 1, T1-W
12. Station 2 (abdomen), Slice 1, T2-W
13. Station 2 (abdomen), Slice 2, P-W
14. Station 2 (abdomen), Slice 2, T1-W
15. Station 2 (abdomen), Slice 2, T2-W
16. Station 2 (abdomen), Slice 3, P-W
17. Station 2 (abdomen), Slice 3, T1-W
18. Station 2 (abdomen), Slice 3, T2-W
19. Station 3 (legs), Slice 1, P-W
20. Station 3 (legs), Slice 1, T1-W
21. Station 3 (legs), Slice 1, T2-W
22. Station 3 (legs), Slice 2, P-W
23. Station 3 (legs), Slice 2, T1-W
24. Station 3 (legs), Slice 2, T2-W
25. Station 3 (legs), Slice 3, P-W
26. Station 3 (legs), Slice 3, T1-W
27. Station 3 (legs), Slice 3, T2-W

According to the Appellants, the 27 images can be displayed in the following three arrangements:

- A. "the obtained images are displayed on a display in order of obtained time" (Req. 14–15):
 - 1., 2., 3., 4., 5., 6., 7., 8., 9., 10., 11., 12., 13., 14., 15., 16., 17., 18., 19., 20., 21., 22., 23., 24., 25., 26., 27.
- B. "the images are displayed according to station position, then image type, and then slice position" (Req. 14):
 - 1., 4., 7., 2., 5., 8., 3., 6., 9., 10., 13., 16., 11., 14., 17., 12., 15., 18., 19., 22., 25., 20., 23., 26., 21., 24., 27.
- C. "the plural images are displayed in spatial order of station positions, as opposed to time order, or another order other than spatial order" (Req. 16):

1., 2., 3., 10., 11., 12., 19., 20., 21., 4., 5., 6., 13., 14., 15., 22., 23., 24., 7., 8., 9., 16., 17., 18., 25., 26., 27.

The first and second arrangements (A. and B.) are conventional. *See* Req. 14 ("In conventional MRI technology, the images obtained by multi-station MRI are typically displayed on a display in time order (i.e. according to time each image was obtained) or another order."); *see also* Spec. para. 9.

By contrast, the Appellants argue that the third arrangement (C.) is an example of "re-organized images which are displayed on the display by *the improved apparatus* of the present application." Req. 15 (emphasis added).

Based on that arrangement (C.), the Appellants argue

the present claim 1 is directed to an improved approach in multi-station MRI including *classifying plural MRI images by image types and station position, based on imaging condition including imaging parameters, and displaying the plural images by image types in spatial order of station positions, based on the classification result.* Since the displayed images have already been reorganized in such improvement, the operator can more efficiently analyze the plural displayed images obtained in multi-station MRI without having to waste time to manually re-organize the images on the display. Such saved time presents a significant savings in cost of care in the current healthcare environment.

Req. 17.

But we do not find the evidence the Appellants put forward in the Request (Req. 14–16) - i.e., plural MRI images displayed in arrangement C. in contrast to conventional arrangements A. or B. - sufficient to support the argument that claim 1 is directed to an "improved apparatus" rather than, as we have determined, image classification. Furthermore, the improvement set forth by Appellants appears to be directed to an increase in operator efficiency, as opposed to any type of improvement to the multi-station MRI

itself. Here, "the plain focus of the claims is [not] on an improvement to computer functionality itself, [but rather, directed to] economic or other tasks for which a computer is used in its ordinary capacity." *See Enfish, LLC*, 822 F.3d at 1336.

Instead of showing an improvement to a multi-station MRI, the evidence reinforces our view that the focus of claim 1 is on classifying images in a particular orientation. Rather than supporting the Appellants' argument that claim 1 is directed to an "improved apparatus," the evidence weighs in favor of the Board's determination, under *Alice* step 1, that the claimed subject matter is directed to the "image classification" abstract idea.

Furthermore, said evidence is not commensurate in scope with what is claimed. For example, claim 1 calls for "display[ing] the plurality of images by image types in spatial order of station positions, based on [classifying the plurality of images by image types and station position, based on imaging condition including imaging parameters]." Arrangement (C.) is but one of several arrangements the claim covers.

The Appellants argue that

a more typical circumstance may involve 160 images corresponding to four stations, ten slices, four image types (Proton, T1, T2, diffusion-weighted). Manual reorganization by the operator, especially in such circumstance, is a time-consuming task and is susceptible to operator error. For example, the typical operator who is sufficiently adept or expert, such as at recognizing the image type from the contrast of the image, would still take approximately five minutes or more to perform the reorganization, with some risk of operator error.

Req. 16. But claim 1 is not limited to improving any particular "typical circumstance." It simply describes a resulting "image classification"

orientation for images acquired via a conventional multi-station MRI. Also, the asserted improvement (i.e., overcoming certain possible difficulties a "typical operator" may experience in performing a "[m]anual reorganization") is not one that is an improvement in, for example, computer functionality. *Cf. Visual Memory LLC v. NVIDIA Corp.*, 2017 WL 3481288, at *5 (Fed. Cir. August 15, 2017).

The Appellants argue that

[s]ince the displayed images have already been reorganized in such improvement, the operator can more efficiently analyze the plural displayed images obtained in multi-station MRI without having to waste time to manually re-organize the images on the display. Such saved time presents a significant savings in cost of care in the current healthcare environment.

Req. 17. This is an unpersuasive argument. It is not commensurate in scope with what is claimed. Notwithstanding it is arguably an inconsequential post-solution activity, analyzing plural displayed images is nevertheless not a claim limitation. Moreover, providing for a "unit" (claim 1) to do what was previously done manually does not add significantly more to the image classification abstract idea. *Cf. Bancorp Services L.L.C. v. Sun Life Assurance Co. of Canada*, 687 F.3d 1266, 1279 (Fed. Cir. 2012) ("the computer simply performs more efficiently what could otherwise be accomplished manually").

The Appellants also argue that like *McRO*, "the claimed apparatus here automates a process, to increase efficiency and decrease the risks of human error." Req. 17. Similarly, the Appellants argue that

the claims of the present application, like those in *Trading Technologies*, No. 2016-1616, slip op. at 6, are directed to improvements to enable the device operator or user to obtain

the advantages of speed, accuracy and usability, and such improvements have no "preelectronic ... analog." The automated display control improvement resolves a specifically identified problem in the prior state of the art and is not an idea that has long existed (which is the threshold criterion of an abstract idea and ineligible concept).

Req. 17. But claim 1 includes no automation limitation. There is no requirement that the process be automated or that the "display control unit" be an *automated* display control. These arguments are not commensurate in scope with what is claimed and are thus unpersuasive as to error in our determination, under *Alice* step one, that the claim 1 subject matter is directed to "image classification," an abstract idea.

The claim 1 apparatus comprises *units* limited in functional terms that correspond to a result rather than to an improvement in the mechanism for achieving it. *Cf. Elec. Power Grp.*, 830 F.3d at 1354 ("[M]erely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.")

Having responded to all the arguments challenging our determination under step one of the *Alice* framework and having found them unpersuasive, we now turn to step two of the *Alice* framework.

Step two

Step two is "a search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible

concept] itself." *Alice Corp.*, 134 S. Ct. at 2355 (alteration in original) (quoting *Mayo*, 132 S. Ct. at 1294).

We maintain our view set forth in the decision that "[w]e see nothing in the subject matter claimed that transforms the abstract idea of [(image)] classification into an inventive concept." Dec. 5.

The Appellants disagree, arguing that "the display control aspect of present claim 1 is necessarily rooted in multi-station MRI display technology, and overcomes a problem specifically arising in conventional approaches for multi-station MRI display." Req. 18–19. But the Appellants do not adequately explain what exactly in claim 1 roots any of the claimed display control aspects in multi-station MRI display technology. All that claim 1 calls for is "a display control unit configured to display the plurality of images in a predetermined display format . . . [which] displays the plurality of images by image types in spatial order of station positions, based on the classification result by the classification processing unit." The aspects of the display control unit are (a) displaying a plurality of images in a predetermined display format and (b) displaying them by image types in spatial order of station positions, based on the classification result by the classification processing unit. As we read the claim, these two aspects are no more than results. What multi-station MRI display technology are these aspects/results rooted in? Claim 1 does not say. Instead the claim phrase "display control unit" is no more than a conduit for the abstract idea of image classification in order to display a resulting classification. *Cf. In re TLI Communications LLC Patent Litigation*, 823 F.3d at 612 (the telephone

unit itself is merely a conduit for the abstract idea of classifying an image and storing the image based on its classification).

The Appellants argue that "the classification portion is not an end in itself, but rather facilitates display control to automate display of images in an advantageous manner, e.g., to improve operator efficiency and reduce risk of operator error, relative to conventional multi-station MRI workflow. Such display control is necessarily rooted in multi-station MRI technology." Req. 19. But claim 1 says nothing about the classification unit facilitating display control, let alone to automate display of images.

The Appellants argue that "[f]or an operator, especially a beginner, [] a large number of total images [(e.g., 160)] is extremely difficult to manually or mentally re-organize in a time-efficient manner and without making any mistakes." Req. 19–20. But claim 1 does not require acquiring such a large number of total images. Moreover, the fact that one could not necessarily classify a large number of images by hand is not dispositive. *See FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016) ("the inability for the human mind to perform each claim step does not alone confer patentability. As we have explained, 'the 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.' *Bancorp Servs.*, 687 F.3d at 1278.")

Finally, the Appellants argue that

the claims of the present application do not broadly and generically claim the use of all types of classification and image display on a computer (so as to pre-empt all manners and ways of classification on a computer), but rather are directed to specific technical improvements as to display of images in a

multi-station MRI apparatus to achieve a desired result (i.e. re-organize images in a desirable, automated way, with much less time and higher reliability than in the conventional art), while avoiding the burden imposed on the operator in the conventional art of manually re-organizing the images.

Req. 20. This argument is unpersuasive because again claim 1 does not call for "re-organiz[ing] images in a desirable, automated way, with much less time and higher reliability than in the conventional art." *Id.* All that claim 1 calls for is a *unit* to display the plurality of images in a predetermined display format, a *unit* to classify the plurality of images by image types and station position, based on imaging condition including imaging parameters, and a *unit* to displays the plurality of images by image types in spatial order of station positions, based on the classification result by the classification processing unit. The *units* are described in terms of the results they achieve. Otherwise no technical details are provided. Claim 1 includes no technical details that indicate, for example, that the images are reorganized in an "automated way," with "much less time and higher . . . reliability than in the conventional art."

For the foregoing reasons, the Appellants do not persuade us that claim 1 includes an element or combination of elements, viewed separately or in the ordered combination as claimed, sufficient to ensure that the claim in practice amounts to significantly more than to be upon the image classification abstract idea itself.

We have considered all of the Appellants' remaining arguments and have found them unpersuasive.

Accordingly, we maintain that claims 1–11 and 13–15 are directed to judicially-excepted subject matter and therefore subject to a rejection under 35 U.S.C. § 101 as patent-ineligible.

Our reasoning is more fully developed than what we presented in the Decision. Therefore, although we maintain our decision, we grant the Request to the extent that the Appellants are given another opportunity to respond. To that end, the new ground of rejection of claims 1–11 and 13–15 under 35 U.S.C. § 101 entered in the Decision is hereby entered anew.

NEW GROUND

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." 37 C.F.R. § 41.50(b) also provides that the Appellants, **WITHIN TWO MONTHS FROM THE DATE OF THE DECISION**, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

- (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner
- (2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record

GRANTED-IN-PART; 37 C.F.R. § 41.50(b)