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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS J. BAILEY, CHRISTOPHER D. JENKINS,
JONATHAN M. ROBERTS, and KIERAN P. SCOTT

Appeal 2017-010816
Application 15/219,985
Technology Center 2400

Before ST. JOHN COURTENAY III, JOHNNY A. KUMAR, and
KAMRAN JIVANI, *Administrative Patent Judges*.

KUMAR, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellants² appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–11, which constitute all the claims pending in this application. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants have filed a related Appeal in co-pending application — U.S. Patent Application No. 15/247,141. App. Br. 2.

² According to Appellants, the real party in interest is International Business Machines Corporation. App. Br. 1.

STATEMENT OF THE CASE³

Disclosed embodiments of Appellants' invention relate to "service based deployment within a system based on a service oriented architecture (SOA), and more specifically, to locating service endpoints from a service registry." Spec. ¶ 1.

Exemplary Claim

1. A method, operable by a service registry in a service oriented environment for provisioning a service within the service oriented environment, the method comprising:

[a] receiving a request for a service from a service requester in the service oriented environment;

[b] checking details of the requested service as registered in the service registry;

characterized by;

[c] in response to the service requested not being registered, sending the request to one or more service providers to provide a new service; and

[d] in response to a service provider providing the new service, updating, by a processor, the service registry with the new service and responding to the service requester that the service is available.

App. Br. 62 (Claims Appendix) (bracketed indicators added).

Rejections

A. Claims 1–11 are rejected under 35 U.S.C. § 101, as being directed to a judicial exception, without significantly more. Final Act. 5–8.

B. Claims 1–10 are rejected under 35 U.S.C. § 103(a) as being obvious over the teachings of Knauerhase et al. (U.S. Patent Application

³ We herein refer to the Final Office Action, mailed Jan. 25, 2017 ("Final Act."); Appeal Brief, filed May 17, 2017 ("App. Br."); Examiner's Answer, mailed June 27, 2017 ("Ans."); and the Reply Brief, filed Aug. 17, 2017 ("Reply Br.").

Publication No. 2004/0236633 A1; Nov. 25, 2004) (hereinafter “Knauerhase”). Final Act. 8–14.

- C. Claim 11 is rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Knauerhase, in view of Esfahany et al. (U.S. Patent Application Publication No. 2005/0262504 A1; Nov. 24, 2005) (hereinafter “Esfahany”). Final Act. 14–15.

Issues on Appeal

1. Did the Examiner err in rejecting claims 1–11 under 35 U.S.C. § 101, as being directed to a judicial exception, without significantly more?
2. Did the Examiner err in rejecting claims 1–11, under 35 U.S.C. § 103, as being obvious over the cited prior art?

ANALYSIS

We have considered all of Appellants’ arguments and any evidence presented. We highlight and address specific findings and arguments for emphasis in our analysis below.

35 U.S.C. § 101

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) (quoting *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.” (emphasis omitted)); 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, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding of rubber products” (*Diamond v. 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. 252, 267–68 (1853))); 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.”). Having said that, 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 (citation 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.* (alterations in original) (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.*

2019 Revised Guidance re: Subject Matter Eligibility

The USPTO recently published revised guidance on the application of 35 U.S.C. § 101. *See* 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Revised Guidance”). *This new guidance is applied in this opinion.* Under the 2019 Revised Guidance, we first look to whether the claim recites:

- 1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, mental processes, or

certain methods of organizing human activity such as a fundamental economic practice or managing personal behavior or relationships or interactions between people); and

2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE (“MPEP”) §§ 2106.05(a)–(c), (e)–(h)).⁴

See 2019 Revised Guidance, 84 Fed. Reg. at 51–52, 55.

A claim that integrates a judicial exception into a practical application applies, relies on, or uses the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54. When the judicial exception is so integrated, then the claim is not directed to a judicial exception and is patent eligible under § 101. *Id.*

Only if a claim: (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then evaluate whether the claim provides an inventive concept. *See* 2019 Revised Guidance at 56; *Alice*, 573 U.S. at 217–18.

For example, we look to whether the claim:

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

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

See 2019 Revised Guidance, 84 Fed. Reg. at 56.

⁴ All references to the MPEP are to the Ninth Edition, Revision 08.2017 (rev. Jan. 2018).

Because there is no single definition of an “abstract idea” under *Alice* step 1, the USPTO has recently synthesized, for purposes of clarity, predictability, and consistency, key concepts identified by the courts as abstract ideas to explain that the “abstract idea” exception includes the following three groupings:

1. Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;
2. Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion); and
3. Certain methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions).

See 2019 Revised Guidance, 84 Fed. Reg. at 52.

According to the 2019 Revised Guidance, “[c]laims that do not recite [subject] matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas,” except in rare circumstances. Even if the claims recite any one of these three groupings of abstract ideas, these claims are still not “directed to” a judicial exception (abstract idea), and thus are patent eligible, if “the claim as a whole integrates the recited judicial exception into a practical application of that exception.” *See* 2019 Revised Guidance, 84 Fed. Reg. at 53.

For example, limitations that **are** indicative of “integration into a practical application” include:

1. Improvements to the functioning of a computer, or to any other technology or technical field — *see* MPEP § 2106.05(a);
2. Applying the judicial exception with, or by use of, a particular machine — *see* MPEP § 2106.05(b);
3. Effecting a transformation or reduction of a particular article to a different state or thing — *see* MPEP § 2106.05(c); and
4. Applying or using the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception — *see* MPEP § 2106.05(e).

In contrast, limitations that are **not** indicative of “integration into a practical application,” include:

1. Adding the words “apply it” (or an equivalent) with the judicial exception, or merely include instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea — *see* MPEP § 2106.05(f);
2. Adding insignificant extra-solution activity to the judicial exception — *see* MPEP § 2106.05(g); and
3. Generally linking the use of the judicial exception to a particular technological environment or field of use — *see* MPEP § 2106.05(h).

See 2019 Revised Guidance, 84 Fed. Reg. at 54–55 (“Prong Two”).

Examiner’s Determination of Patent-Ineligibility

In rejecting claims 1–11 under 35 U.S.C. § 101, the Examiner determines these claims are directed to receiving a request for a service from a service requester, checking details of the requested service as registered in a service registry and in response to a service provider providing a new service, updating the service registry with the new service, which is

considered as (1) “mental steps” or (2) “certain methods of organizing human activity” such as a commercial interaction involving “advertising, marketing, and sale activities”—categories of abstract ideas under the 2019 Revised Guidance. *See* Final Act. 7. Particularly, the Examiner determines that the claims include limitations that are analogous or similar to concepts of “collecting and comparing information” as discussed in *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057 (*Fed. Cir. Aug. 2011*) (holding that claims directed to “collecting and comparing known information” are patent-ineligible “mental steps” under section 101).⁵ Final Act. 6–7.

The Examiner also determines the claims do not include additional elements that amount to significantly more than the judicial exception, because the claims do not “recite an improvement to another technology or technical field, an improvement to the functioning of the computer itself, or meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment.” *Id.* at 7.

The Examiner further finds “the limitations require no more than a generic computer to perform generic computer functions (e.g., receiving, sending, updating etc.) that are well-understood, routine and conventional activities previously known to the industry.” *Id.*

For the aforementioned reasons, the Examiner concludes that claims

⁵ The MPEP cites *Classen* as an example case identifying a mental process. Specifically, “[c]oncepts relating to data comparisons that can be performed mentally or are analogous to human mental work.” *See* MPEP § 2106.04(a)(2), sections III and III A

1–11 are not patent eligible under 35 U.S.C. § 101.^{6, 7} Final Act. 8.

Alice/Mayo—Step 1 (Abstract Idea)

Step 2A—Prongs 1 and 2 identified in the 2019 Revised Guidance

Step 2A, Prong One

Appellants argue that claim 1 is not directed to an abstract idea because: (1) the claims are directed to an improvement in computer capabilities or an improvement of an existing technological process rather than an abstract idea; (2) unlike *Classen Immunotherapies* the claimed invention does not perform collecting and comparing data; and (3) unlike the claims at issue in *Classen Immunotherapies*, limitations [d] and [e] of claim 1 use and apply data. App. Br. 13–18 and 20–22; Reply Br. 2–5.

Appellants’ arguments are not persuasive. Claim 1 broadly relates to a registry for locating a service in response to a request from a service requester by: determining if a requested service is registered, sending the request to service providers if the requested service is not registered, and forwarding the service provider to the service requester. *See* App. Br. 62.

As correctly recognized by the Examiner (Final Act. 7), the steps of [a] “receiving a request for a service from a service requester”; [b] “checking details of the requested service . . . characterized by”; [c] “in response to the service requested not being registered, sending the request to one or more service providers to provide a new service”; [d] “in response to

⁶ “Patent eligibility under § 101 presents an issue of law.” *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1340–41 (Fed. Cir. 2013).

⁷ Throughout this Opinion, we give the contested claim limitations the broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

a service provider providing the new service, updating . . . the service registry . . . responding to the service requester that the service is available,” as recited in Appellants’ claim 1, could be performed alternatively by a person as a mental process, which is a category of abstract idea identified by the 2019 Revised Guidance. *See CyberSource*, 654 F.3d at 1372–73 (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”); *see also In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) (“[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application.”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature, . . . *mental processes*, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” (Emphasis added)). Additionally, mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.”).

For example, steps of “[a] receiving a request for a service from a service requester” and “[b] checking details of the requested service” can be performed by a human administrator who simply receives and checks details of the request for a service. Similarly, steps of “[c] in response to the service requested not being registered, sending the request to one or more service providers to provide a new service”; and “[d] in response to a service provider providing the new service, updating . . . the service registry . . . responding to the service requester that the service is available” can be

performed by a human administrator who updates the service registry in response to a service provider providing the new service on a paper.

Alternatively, “[a] receiving a request for a service from a service requester,” “[b] checking details of the requested service,” “[c] in response to the service requested not being registered, sending the request to one or more service providers to provide a new service,” and “[d] in response to a service provider providing the new service, updating . . . the service registry . . . responding to the service requester that the service is available” as recited in Appellants’ claim 1 are also descriptive of a “certain method[] of organizing human activity,” specifically, marketing, sales, and advertising, as set forth in the 2019 Revised Guidance, because “updating . . . the service registry,” according to Appellants’ Specification, is used to support “business processes” and “is a part of maintaining on demand services.” (see Spec. ¶ 2). *See* 2019 Revised Guidance, 84 Fed. Reg. at 52. Nowhere in Appellants’ Specification is there any description that “updating . . . the service registry” is intended to improve computer capabilities or an existing technology process, as Appellants argue. App. Br. 13–14; Reply Br. 3–4. Rather, the activities recited in Appellants’ claim 1 are squarely within the realm of abstract ideas, like: (1) the risk hedging in *Bilski v. Kappos*, 561 U.S. 593 (2010); (2) the intermediated settlement in *Alice*, 573 U.S. at 220; (3) verifying credit card transactions in *CyberSource*, 654 F.3d at 1370; (4) guaranteeing transactions in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1354 (Fed. Cir. 2014); (5) distributing products over the Internet in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014); (6) determining a price of a product offered to a purchasing organization in *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306 (Fed. Cir. 2015);

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and (7) pricing a product for sale in *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015).

Step 2A, Prong Two

According to the 2019 Revised Guidance, even if the claims recite “mental processes” or “certain methods of organizing human activity,” these claims are still not “directed to” a judicial exception (abstract idea), and thus are patent-eligible, if “the claim as a whole integrates the recited judicial exception into a practical application of that [judicial] exception.” *See* 2019 Revised Guidance, 84 Fed. Reg. at 53. The “integration into a practical application” prong requires an additional element or a combination of additional elements in the claim to apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the exception. *See* 2019 Revised Guidance, 84 Fed. Reg. at 53–55.

However, for the reasons which follow, we conclude that Appellants’ claims 1–11 do not integrate the judicial exception into a practical application. *See* MPEP §§ 2106.05(a)–(c) and (e)–(h). Applying the case law and in view of the 2019 Revised Guidance, we address these “practical application” MPEP sections *seriatim*.

MPEP § 2106.05(a) "Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field"

This section of the MPEP guides:

In determining patent eligibility, examiners should consider whether the claim "purport(s) to improve the functioning of the computer itself" or "any other technology or technical field."

...

While improvements were evaluated in *Alice Corp.* as relevant to the search for an inventive concept (Step 2B), several decisions of the Federal Circuit have also evaluated this consideration when determining whether a claim was directed to an abstract idea (Step 2A).

MPEP § 2106.05(a)

The MPEP instructs:

Thus, an examiner may evaluate whether a claim contains an improvement to the functioning of a computer or to any other technology or technical field **at Step 2A or Step 2B**, as well as when considering whether the claim has such self-evident eligibility that it qualifies for the streamlined analysis.

Id. (emphasis added).

Regarding the purported *improvements of an existing technological process* offered by the claimed invention, Appellants contend:

As a result, the first step in the Alice inquiry in this case should be whether the focus of the claims is on an improvement in computer capabilities or an improvement of an existing *technological process* or, instead, on a process that qualifies as an "abstract idea." *Enfish, LLC v. Microsoft Corp.*, 118 U.S.P.Q.2d 1684, 1689 (Fed. Cir. 2016). The claimed invention is directed to *an improvement in computer capabilities* or an *improvement of an existing technological process*, namely, *allowing the service requester to receive a desired quality of service and not experiencing a delay or difference in quality of service even if the requested service had its processing priority lowered and needed to be reconfigured.* See, e.g., paragraphs

[0005 and 0020-0026] of Appellant's specification. The claimed invention is not directed to an improvement of economic or other tasks for which a computer is used in its ordinary capacity.

App. Br. 13–14 (emphasis added).

Appellants further urge the claimed invention recites an *improvement to the function of a computer*:

The U.S. 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, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016); See also *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2358-59 (2014). Hence, software can be patented even if it does not improve the functioning of the computer. Although, an argument can be made that there is an improvement in the functioning of the computer using Appellant[s’] claimed invention, such as improving computer efficiency, by more efficiently managing low demand services from a service provider’s available services as discussed in paragraph [0025] of Appellant's specification. As discussed in . . . Appellant[s’] specification, *Appellant[s’] claimed invention can more efficiently uninstall and then reinstall a service thereby allowing more efficient management of low demand services from a service provider's available services.*

Reply Br. 2–3 (emphasis added).

In other words, Appellants assert arguments for (1) *an improvement to the functioning of a computer* and (2) a more general *improvement to an existing technological process*. However, Appellants’ arguments are not persuasive because Appellants’ claim 1 fails to recite (1) any limitations detailing “low demand services”, how to efficiently “uninstall and then reinstall a service” or *how* management of services are allowed to be more efficient, and (2) any limitations detailing *how* “allowing the service

requester to receive a desired quality of service” or *how* “not experiencing a delay or difference in quality of service even if the requested service had its processing priority lowered and needed to be reconfigured” is achieved.

When a claim directed to an abstract idea contains no restriction on *how* an asserted improvement is accomplished and the asserted improvement is not described in the claim, then the claim does not become patent eligible. *See Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1316 (Fed. Cir. 2016).

Separately, we note the *Enfish* court held the focus of *Enfish*’s claims were “directed to a specific *improvement to the way computers operate*, embodied in the *self-referential table*.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016) (emphasis added). As noted by the *Enfish* court, “traditional databases, such as ‘those that follow the relational model and those that follow the object oriented model,’ ’604 patent, col. 1, ll. 37–40, are inferior to the claimed invention.” *Enfish*, 822 F.3d at 1337.

Citing again to the *Enfish* ’604 patent Specification (col. 2, ll. 10–13), the court explained “[t]he structural requirements of current databases require a programmer to predefine a structure and subsequent [data] entry must conform to that structure;” however, the “database of the present invention does not require a programmer to preconfigure a structure to which a user must adapt data entry.” *Id.* (alteration in original).

We emphasize that the *self-referential database table* considered by the court in *Enfish* was found to be a specific type of data structure that was designed to *improve* the way a computer stores and retrieves data in memory. *Id.* at 1339. Because the *Enfish* court found the claimed *self-referential database table improved* the way the computer stored and

retrieved data, the court concluded the *Enfish* claims were not directed to an abstract idea, and thus ended the analysis at *Alice* step one. *Id.* at 1336.

Here, unlike the claims of *Enfish*, the present claims are not directed to “a specific improvement to the way computers operate, embodied in the self-referential table.” *Enfish* at 1336. As correctly noted by the Examiner:

[Appellants’] claims are not focused on improving computer capabilities but on providing new service in response to service requested not being registered. Providing new service in response to service requested not being registered using devices and processors is solving a business problem, not improving computer processing or solving a technical problem. In other words, the benefit is to risk management, not computer processing. The focus of the claims is not on such an improvement in computers as tools, but rather on abstract ideas that use computers as tools.

Ans. 5 (emphasis omitted).

The Examiner’s conclusion that the solution offered by Appellants’ claim 1 is a business rather than a technological solution is evidenced by the claim’s failure to recite anything other than generic hardware (i.e. “service registry,” “service oriented environment,” “processor”) outside of the abstract idea. *See* Spec. ¶ 27 (“computer system/server 12, which is operational with numerous other general purpose . . . computing system environments or configurations. Examples of well-known computing systems, environments, and/or configurations that may be suitable for use with computer system/server 12 include, but are not limited to . . . any of the above systems or devices, and the like”); ¶¶ 40–41 (“flowchart illustrations . . . can be implemented by computer readable program instructions . . . instructions may be provided to a processor of a general purpose computer . . . or other programmable data processing apparatus”); ¶ 44 (“cloud

computing environment 50 of an embodiment of the present invention is depicted . . . computing nodes 10 and cloud computing environment 50 can communicate with any type of computerized device over any type of network and/or network addressable connection”). The Specification defines the claim 1 limitation “service registry” as

an index of a subset of information about a service (for example, the location and name of service document) enabling the corresponding service document to be located and accessed in a repository 514 (or even the corresponding service located at the service provider).

Spec. ¶50.

In *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1329 (Fed. Cir. 2017), the Federal Circuit concluded that claims directed to the use of an index to search for and retrieve data constituted an abstract idea as well as a well-known, routine and conventional process. *See id.* at 1327 (“the abstract idea of creating an index and using that index to search for and retrieve data . . . organizing and accessing records through the creation of an index-searchable database, includes longstanding conduct that existed well before the advent of computers and the Internet” (quotations omitted)); *id.* at 1329 (using an index to receive a request for information and delivering records constitute “no more than the performance of well-understood, routine and conventional activities previously known in the industry” (citations, brackets, and quotations omitted)). Here, claim 1 broadly recites a process for sending a request to a service registry, forwarding the request to service providers based on checking details in the service registry, and updating the registry using a generic processor. Accordingly, claim 1 does not recite additional details on how the service registry is improved or implemented that changes the analysis in *Intellectual Ventures*.

Similarly, the Supreme Court in *Alice* (573 U.S. 208, at 226) reviewed a method claim requiring “the use of a computer to create electronic records, track multiple transactions, and issue simultaneous instructions.” *Id.* at 224 (citations omitted). The petitioner in *Alice* emphasized that the method claims “recite specific hardware configured to perform specific computerized functions.” *Id.* at 226 (citation and quotations omitted). The *Alice* court found

But what petitioner characterizes as specific hardware—a “data processing system” with a “communications controller” and “data storage unit,” . . . is purely functional and generic. Nearly every computer will include a “communications controller” and “data storage unit” capable of performing the basic calculation, storage, and transmission functions required by the method claims.

Id. (citations omitted).

Here, claim 1 does not recite additional details, functionality or specialized processes to the recited generic components noted *supra* to distinguish itself from the analysis in *Alice*.

Moreover, Appellants acknowledge claim 1 is directed to solving a business problem. *See* App. Br. 14 (“The claimed invention is directed to . . . allowing the service requester to receive a desired quality of service and not experiencing a delay or difference in quality of service”); *id.* (“The claimed invention addresses such a need by provisioning a service within a service oriented environment”). The Specification clarifies that a service oriented architecture used to operate the “service oriented environment” of claim 1 is directed to “a business-driven IT architectural approach that supports integrating business processes as linked, repeatable business tasks, or services as defined in service documents.” Spec ¶¶ 1–2. Rather than

addressing a problem unique to the technology in which the solution is implemented, Appellants' claim 1 merely automates, using generic computer technology, a pre-internet process in which an index is used to determine a suitable service requested by a user and provides this information to the service requester. Thus, the method is directed to facilitating a commercial transaction, which is not an improvement to technology. *See* MPEP § 2106.05 (a).

Thus, we agree with the Examiner (Final Act. 7; Ans. 5–8) that Appellants' claims merely implement generic computer components to perform the recited steps or functions. In reviewing the record, we find representative claim 1 on appeal is *silent* regarding specific limitations directed to an *improved* computer system, processor, memory, network, database, or Internet. Therefore, we find Appellants' claimed invention does not provide a solution “necessarily rooted in *computer technology* in order to overcome a problem specifically arising in the realm of computer networks,” such as considered by the court in *DDR Holdings LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) (emphasis added).

MPEP § 2106.05(b) Particular Machine

MPEP § 2106.05(c) Particular Transformation

Appellants advance no arguments in the Briefs that are directed to the *Bilski* machine-or-transformation test. Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

MPEP § 2106.05(e) Other Meaningful Limitations

This section of the MPEP guides:

Diamond v. Diehr provides an example of a claim that recited *meaningful limitations* beyond generally linking the use of the judicial exception to a particular technological environment. 450 U.S. 175, 209 USPQ 1 (1981). In *Diehr*, the claim was directed to the use of the Arrhenius equation (an abstract idea or law of nature) in an automated process for operating a rubber-molding press. 450 U.S. at 177-78, 209 USPQ at 4. The Court evaluated additional elements such as the steps of installing rubber in a press, closing the mold, constantly measuring the temperature in the mold, and automatically opening the press at the proper time, and found them to be *meaningful* because they sufficiently limited the use of the mathematical equation to the practical application of molding rubber products. 450 U.S. at 184, 187, 209 USPQ at 7, 8. In contrast, the claims in *Alice Corp. v. CLS Bank International* did not *meaningfully limit* the abstract idea of mitigating settlement risk. 573 U.S. ___, 134 S. Ct. 2347, 110 USPQ2d 1976 (2014). In particular, the Court concluded that the additional elements such as the data processing system and communications controllers recited in the system claims did not *meaningfully* limit the abstract idea because they merely linked the use of the abstract idea to a particular technological environment (i.e., “implementation via computers”) or were well-understood, routine, conventional activity[.]

MPEP § 2106.05(e) (emphasis added).

Appellants contend:

in *Alice Corporation Pty. Ltd v. CLS Bank International, et al.*, the U.S. Supreme Court indicated that if the claim is directed to an abstract idea, then "improvements to another technology or technical fields" or "*meaningful limitations* beyond generally linking the use of an abstract idea to a particular technological environment" may be enough to qualify as "significantly more" to become statutory subject matter . . . the claimed invention addresses the need in having the service requester receive a desired quality of service and not experience a delay or difference in quality of service even if the requested service had its processing priority lowered and needed to be reconfigured.

App. Br. 16–17 (citations omitted, emphasis added).

But “a claim for a new abstract idea is still an abstract idea.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (emphasis omitted); *see also Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1321 (Fed. Cir. 2016) (“A narrow claim directed to an abstract idea, however, is not necessarily patent-eligible.”). To the extent Appellants also urge that the purportedly meaningful limitations are not well-understood, routine, and conventional, we address this issue under *Step 2B (Inventive Concept)*, *infra*. For the reasons discussed further below, and on this record, it is our view that Appellants’ claims do not add *meaningful limitations* beyond generally linking the use of the judicial exception to a particular technological environment.

MPEP §2106.05(f) Mere Instructions to Apply an Exception

Appellants contend:

[Appellants’] claimed invention is not simply directed to collecting and comparing data and neither is Appellant's claimed invention simply directed to collecting and comparing data without using or applying the data . . . [a]s recited in claim 1, *in response to the service requested not being registered, sending the request to one or more service providers to provide a new service. Hence, the details are being used and applied.*

App. Br. 19–20 (emphasis added).

However, this limitation of claim 1 cited by Appellants provides no restriction on how the result of “sending the request to one or more service providers” is accomplished. In such cases, the instructions do not provide significantly more because this type of recitation is equivalent to the words “apply it.” *See* MPEP § 2106.05(f), consideration (1); *see also Electric Power Group, LLC v. Alstom, S.A.*, 830 F.3d 1350, 1356 (Fed. Cir. 2016);

Intellectual Ventures I v. Symantec Corp., 838 F.3d 1307, 1327 (Fed. Cir. 2016); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015); *Intellectual Ventures v. Erie Indem. Co.*, 850 F.3d 1315, 1331 (Fed. Cir. 2017) (Remotely accessing user-specific information through a mobile interface and pointers to retrieve the information without any description of how the mobile interface and pointers accomplish the result of retrieving previously inaccessible information).

Accordingly, we are of the view that claims 1–11 invoke generic computer components as a tool in which the *computer instructions* apply the judicial exception. To the extent Appellants urge that the claimed efficient means for managing multiple referrals for a single patient are not generic, well-understood, routine, or conventional (App. Br. 18; Reply Br. 7–8), we address this issue under *Step 2B (Inventive Concept)*, *infra*.

MPEP § 2106.05(g) Insignificant Extra-Solution Activity

Appellants advance no specific arguments in the Briefs contending the claims do not recite insignificant extra-solution activity. However, we note the last recited step or function of independent claim 1 merely gathers information. Courts have found such data gathering steps to be insignificant extra-solution activity. *See, e.g., Bilski*, 545 F.3d at 963 (*en banc*), *aff'd sub nom Bilski v. Kappos*, 561 U.S. 593 (2010) (characterizing data gathering steps as insignificant extra-solution activity); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (presenting offers and gathering statistics amounted to mere data gathering). To the extent that data is displayed (or otherwise made available to the service requester) by the recited “responding” step or function (“and responding to the service

requester that the service is available” — claim 1), we conclude such displayed *or otherwise provided data* is an example of insignificant extra-solution activity.

The Supreme Court guides that the “prohibition against patenting abstract ideas ‘cannot be circumvented by attempting to limit the use of the formula to a particular technological environment’ or [by] adding ‘insignificant postsolution activity.’” *Bilski*, 561 U.S. at 610–11 (quoting *Diehr*, 450 U.S. at 191–92).

Therefore, on this record, we are of the view that Appellants’ claims do not operate the recited generic computer components in a manner to achieve an improvement in computer functionality.

MPEP § 2106.05(h) Field of Use and Technological Environment

[T]he Supreme Court has stated that, even if a claim does not wholly *pre-empt* an abstract idea, it still will not be limited meaningfully if it contains only insignificant or token pre- or post-solution activity—such as *identifying a relevant audience, a category of use, field of use, or technological environment*.

Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1346 (Fed. Cir. 2013) (emphasis added).

The Examiner finds that “the claims do not include limitations that are ‘significantly more’ than the abstract idea because the claims do not include . . . meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment.” Ans. 5. The Examiner further finds that similar to the narrowing of an abstract idea to an advertising environment in *Ultramercial* and to particular types of transactions in *buySAFE* (765 F.3d at 1354), recitations of a “request for a service from a service requester,” “service registry,” and “service providers”

in a service oriented environment fails to render the claim limitations any less abstract. Ans. 8.

Appellants argue, “[c]ontrary to the claim limitations in *Ultramercial*, the claim limitations are not conventional steps specified at a high level of generality”. Reply Br. 7. We find Appellants’ argument to be conclusory because, other than reciting the limitations of claim 1, Appellant provides no further substantive explanation or evidence in support. We afford such conclusory attorney argument little weight. *See In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997). *See also Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 424 F.3d 1276, 1284 (Fed. Cir. 2005) (“Attorney argument is no substitute for evidence.”).

Accordingly, we agree with the Examiner that *Ultramercial* is analogous to the record before us. Like *Ultramercial*, limiting generic components in claim 1 such as an index (“service registry”), a computing environment (“service oriented environment”), a processor (“updating, by a processor, the service registry”) and computing device (“service provider”) to particular technological environment does not amount to more than generically linking the use of the judicial exception to a particular field of use. *See* MPEP § 2106.05(h), *example ix* (“Specifying that the abstract idea of using advertising as currency is used on the Internet, because this narrowing limitation is merely an attempt to limit the use of the abstract idea to a particular technological environment, *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716, 112 USPQ2d 1750, 1755 (Fed. Cir. 2014)”).

After applying the 2019 Revised Guidance, we are of the view that the Examiner did not err in concluding that claims 1–11 on appeal recite steps or functions that fall under the category of a method of organizing human

behavior comprising commercial interactions including marketing activities that could also be performed as a mental process. In light of the foregoing, we conclude, under the 2019 Revised Guidance, that each of Appellants' claims 1–11, considered as a whole, are directed to a patent-ineligible abstract idea that is not integrated into a practical application, under MPEP §§ 2106.05(a)–(c) and (e)–(h)).

The Inventive Concept – Step 2B

With respect to step 2B, Appellants argue:

[t]he Examiner asserts that Appellant[s'] claimed invention is only directed to routine, conventional and well-understood activities[□] previously engaged in by those in the field of the present invention, and therefore, is directed to an abstract idea However, *the Examiner has not provided any evidence that any of the claim limitations are routine, conventional and well-understood that were previously engaged in by those in the field of the present invention.* In fact, if such limitations are so conventional, why then does the Examiner need reject the claims under 35 U.S.C. §103(a)?

App. Br. 18 (footnote omitted, emphasis added).

We disagree with Appellants that the Examiner fails to provide any factual support for the assertion that the abstract idea is implemented on a computer using generic components that are well-understood, routine, and conventional activities previously known to the industry.

Rather, the Examiner's finding that the present claims recite an abstract idea implemented on a computer using generic components that are well-understood, routine, and conventional activities previously known to the industry (Final Act. 7, Ans. 5–8) is supported by case law cited by the Examiner. Ans. 6 and 8 (citing *Ultramercial*, 772 F.3d at 716–717); Ans. 6

(citing *Alice*, 573 U.S. at 209); Ans. 8 (citing *buySAFE*, 765 F.3d at 1355). According to MPEP § 2106.05(d), section II, *Ultramercial*, *Alice*, and *buySAFE* are all recognized as cases the Examiner may use to support a finding of well-understood, routine, and conventional activities. *See also Berkheimer Memo*, 83 Fed. Reg. 17536, 17537 (Apr. 20, 2018) (support element 2, “[a] citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well understood, routine, conventional nature of the additional element(s)”).

Additionally, we find Appellants’ argument regarding the Examiner’s rejection of the claims under 35 U.S.C. § 103(a) constitutes evidence the claims are not conventional (App. Br. 18) to be unavailing. “. . . ‘Novelty’ of any element or steps in a process, or even of the process itself, is of *no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1315 (Fed. Cir. 2016) (quoting *Diehr*, 450 U.S. at 188–89). *See also Synopsys*, 839 F.3d at 1151 (“a claim for a new abstract idea is still an abstract idea. The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novelty”) (emphasis omitted); MPEP § 2106.05 (“Because they are separate and distinct requirements from eligibility, patentability of the claimed invention under 35 U.S.C. 102 and 103 with respect to the prior art is neither required for, nor a guarantee of, patent eligibility under 35 U.S.C. 101”).

As noted *supra* in *Step 2A (Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field)*, we find the additional elements of claim 1 (i.e., “service registry,” “service oriented environment,” “processor”) are merely generic computer components.

Appellants do not present additional arguments with respect to the limitations of dependent claims 2–11 under 35 U.S.C. § 101. For the reasons discussed above, we conclude Appellants’ claims 1–11 invoke generic computer components merely as a tool in which the computer instructions apply the judicial exception. Accordingly, we sustain the Examiner’s rejection of claims 1–11 under 35 U.S.C. § 101.

35 U.S.C. § 103(a)

Independent claim 1[c] (as annotated in the *Exemplary Claim* section *supra*), recites “in response to the service requested not being registered, sending the request to one or more service providers to provide a new service.”

In rejecting claim 1, the Examiner finds a first embodiment of Knauerhase (citing ¶¶ 16, 19, 26–30 and FIGS. 1, 3, and 4) fails to disclose limitation [c] and cites to a second embodiment of Knauerhase (citing ¶¶ 40–45, referencing FIG. 5) as teaching limitation [c]. Final Act. 9–11, 22–23.

The Examiner finds Knauerhase teaches claim 1, limitation [a] “receiving a request for a service from a service requester in the service oriented environment” (citing FIG. 3, step 300 “Service Consumer Requests A Provider,” ¶¶ 16, 19, and 28) and limitation [b] “checking details of the requested service as registered in the service registry” (e.g., citing FIG. 3, step 302, “Registry Determines Machines 102-106 Offer Service,” ¶¶ 26–30). Final Act. 9.

With respect to limitation [c], the Examiner finds Knauerhase teaches determining if a service requested not being registered (e.g., ¶ 36, FIG. 4, step 402 “alive,” 404 “Delete Unavailable Service Provider from Registry”)

and also sending a request to one or more service providers to provide a new service (e.g., ¶¶ 40–45, “registry may use the shelf-life to evict or renew registration of those services”) (e.g., ¶¶ 36–37 “Registry may query 410 a Service Provider for status updates” (emphasis omitted), FIG. 4, 410, 412), which the Examiner maps to claim 1[c]:

in response to the service requested not being registered, sending the request to one or more service providers to provide a new service.

Final Act. 10–11, 22–23 (citing Knauerhase ¶¶ 31, 33, 35–37, 40–45, FIG. 3, steps 304 to 308, FIG. 4, steps 410, 412).

Appellants argue Knauerhase does not teach or suggest claim 1, limitation [c]. App. Br. 23–25; Reply Br. 9–14. Specifically, Appellants argue the passages cited by the Examiner would not suggest “to one of ordinary skill in the art to send the request to one or more service providers to provide a new service in response to the service requested not being registered.” App. Br. 24. Rather, Appellants argue “Knauerhase only discusses the aspect of a shelf-life attribute associated with providers where after expiration, the contents (published services) are deemed less appealing, and may in fact be thrown away (deregistered from the service registry database).” *Id.* We agree with Appellants.

Knauerhase teaches, in response to a particular service request (FIG. 3, 300), determining if an already registered service provider is available to provide that particular service (FIG. 3, 304, FIG. 4, 400). *See* Knauerhase (¶¶ 28–29 “Registry determines 302 providers known to the registry to offer Service A . . . Registry 100 optionally first confirms 304 continued availability (see also FIG. 4), willingness, etc. of the Service Providers 102-106 to perform the requested service”) (emphasis omitted). Additionally,

Knauerhase teaches determining if a *currently registered* service provider (FIG. 4, 400 “service provider in registry of service providers”) is *unavailable* (FIG. 4, 404 “Delete Unavailable Service Provider”), but fails to teach or suggest determining “the service requested not being registered” as required in claim 1[c]. Knauerhase teaches *availability* is distinct from *not being registered* since *availability* is determined based on checking meta-data of *already registered service providers*. See Knauerhase (¶¶ 20, 28–29, 34 “Registry performs various tests to ensure continued availability of a provider”, FIG. 4, 400 “Provider in Registry of Service Providers”).

Additionally, Knauerhase teaches registering new service providers (FIG. 5, step 504, “Register Service Provider and Services”) if a service provider is publishing services (¶ 40, FIG. 5, 502, “Publishing?”) and the capability to renew registration of deregistered services (¶¶ 40, 45). However, Knauerhase provides no teaching or suggestion that registration of new service providers or renewal of deregistered services is “in response to the service requested not being registered” as required in claim 1[c].

None of Knauerhase’s teachings cited by the Examiner can reasonably be considered as sending a request to a service provider to provide a new service. Accordingly, we agree with Appellants’ arguments (*see* App. Br. 23–25; Reply Br. 9–14) that Knauerhase does not disclose “in response to the service requested not being registered, sending the request to one or more service providers to provide a new service” as recited in claim 1. Additionally, with respect to claim 11, Esfahany fails to cure this deficiency.

Next, the Examiner finds limitation [c] of claim 1 is a *conditional step* and “an examiner need not find the conditional method steps in the prior art to establish the claimed method would have been obvious.” Final Act. 23;

Ans. 12–13. However, as argued by Appellants (Reply Br. 14–15), we find the Examiner improperly construes the positively recited limitation in claim 1[c] as an if/then statement to find a conditional limitation:

Noting the claim limitation “in response to the service requested not being registered . . .” *is a conditional limitation as “if the requested service is not registered then sending the request to one or more providers to provide a new service”*; noting the last claim limitation “in response to a service provider providing the new service, updating, by a processor, the service registry” is a conditional limitation.

Ans. 13 (emphasis in original omitted and emphasis added).

“Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim.” *SuperGuide Corp. v. DirecTV Enter., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004). *See also Altiris Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369–70 (Fed. Cir. 2003) (holding that it was improper to read a specific order of steps into method claims where, as a matter of logic or grammar, the language of the method claims did not impose a specific order on the performance of the method steps); MPEP § 2111.01.

We agree with Appellants’ argument (Reply Br. 15–16) that claim 1[c] is a positively recited limitation since “in response to” is analogous to a “whereby” clause rather than an if/then statement. *See* MPEP § 2111.04. *See also In Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329 (Fed. Cir. 2005), the court held that when a “‘whereby’ clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention.”). Furthermore, claim 1 is distinguishable from the precedential PTAB decision *Ex parte Schulhauser*, Appeal 2013-007847

(PTAB April 28, 2016) because claim 1 does not contain mutually exclusive method steps triggered by a condition precedent.

The method claim in *Schulhauser* was directed to monitoring cardiac conditions and recited, *inter alia*, (1) collecting electrocardiac signal data, (2) comparing the data with a threshold electrocardiac criteria for indicating a strong likelihood of a cardiac event, (3) “triggering an alarm state if the . . . data is not within the threshold,” and (4) “determining the current activity level of the subject . . . if the electrocardiac signal data is within the threshold.” *Schulhauser*, slip op. at 1–2. The Board found the “triggering” and “determining” steps are “mutually exclusive” and that the claim “as written covers at least two methods”; “one in which the prerequisite condition for the triggering step is met and one in which the prerequisite condition for the determining step is met.” *Schulhauser*, slip op. at 7–8.

Unlike the method claim in *Schulhauser*, the steps of method claim 1 are not mutually exclusive and the claim, as written, covers only one method. Moreover, *Schulhauser* does not require that all conditional claim limitations are not to be given patentable weight. Rather, *Schulhauser* gave patentable weight to the conditional “triggering” step, “triggering an alarm state if the electrocardiac signal data is not within the threshold electrocardiac criteria.” *Schulhauser*, slip op. at 6–7.

Thus, we conclude that the broadest reasonable interpretation of claim 1 requires the performance of the step “in response to the service requested not being registered, sending the request to one or more service providers to provide a new service.”

Dependent claims 2–11 each depend from independent claim 1. Therefore, we cannot sustain the Examiner’s rejection of claims 1–10 as

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obvious in view of Knauerhase or the Examiner's rejection of claim 11 as obvious in view of Knauerhase and Esfahany. This issue is dispositive. Therefore, we do not reach consideration of Appellants' remaining arguments. Accordingly, we reverse the Examiner's rejection under 35 U.S.C. § 103(a) of claims 1–11.

DECISION

We affirm the Examiner's decision rejecting claims 1–11 under 35 U.S.C. § 101.

We reverse the Examiner's decision rejecting claims 1–11 under 35 U.S.C. § 103(a).

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, the Examiner's decision is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED