

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ELEKTA, INC.,
Petitioner,

v.

VARIAN MEDICAL SYSTEMS, INC.,
Patent Owner.

Case IPR2015-01401
Patent 7,945,021 B2

Before BRIAN J. McNAMARA, PATRICK M. BOUCHER, and
GARTH D. BAER, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge* BAER.

Opinion Dissenting-in-part filed by *Administrative Patent Judge*
BOUCHER.

BAER, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

Elekta Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 (“the challenged claims”) of U.S. Patent No. 7,945,021 B2 (Ex. 1001, “the ’021 patent”). Patent Owner, Varian Medical Systems, Inc. (“Patent Owner”), filed a Preliminary Response. Paper 10 (“Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons set forth below, we conclude that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of the challenged claims. Therefore, we institute *inter partes* review of the challenged claims.

I. BACKGROUND

A. RELATED PROCEEDINGS

The parties assert the ’021 patent is involved in proceedings before the International Trade Commission. Paper 8, 2; Paper 16, 2.

B. THE ’021 PATENT

The ’021 patent is directed to using an imaging device for radiation therapy. Ex. 1001, 1:8–10. The Specification describes a need for “identifying the precise location of the target volume immediately prior to a dose of therapeutic radiation,” and, to that end, discloses a “cone beam computed tomography radiotherapy simulator and treatment machine.” Ex. 1001, 1:18–20, 46–47.

Figure 3 is reproduced, in part, below:

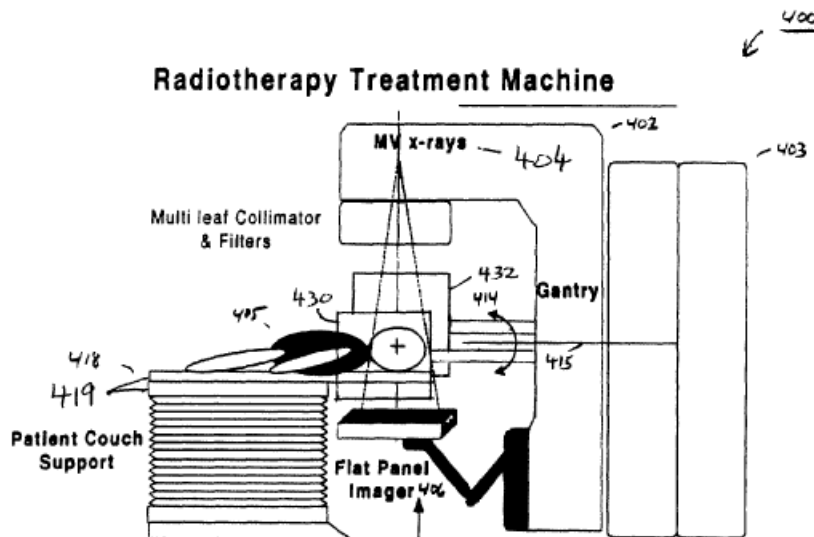


Figure 3 depicts the '021 patent's clinical treatment machine. *Id.* at 5:16–17. The Specification describes the machine as follows:

The clinical treatment machine 400 includes a rotatable gantry 402 pivotably attached to a drive stand 403. A cone-beam CT radiation source 404 and a flat panel imager 406 oppose each other and are coupled to the rotatable gantry 402. . . . A treatment couch 418 is positioned adjacent to the gantry 402 to place the patient and the target volume within the range of operation for the radiation source 404 and the imager 406.

Id. at 5:18–28. The Specification describes that “[the] gantry rotates around the patient while the radiation from the cone-beam CT radiation source impinges the flat-panel imager.” *Id.* at 2:51–56 (reference numerals omitted). “The gantry rotates and collects image data until a computer can calculate a representation of the patient and the target volume.” *Id.* at 2:56–58 (reference numerals omitted). Then, “a treatment plan may be generated from the collected image data . . . to apply a radiation dose to a target volume” while minimizing unwanted radiation to healthy tissue and critical structures. *Id.* at 2:61–67.

C. ILLUSTRATIVE CLAIM

Claim 1 (reproduced below) is illustrative of the claimed subject matter.

1. An apparatus, comprising:

a radiation treatment system capable of implementing a treatment plan, the system comprising:

a frame;

a rotatable gantry coupled to the frame;

a high-energy radiation source coupled to the rotatable gantry to radiate a patient with therapeutic radiation;

a cone-beam radiation source coupled to the rotatable gantry to radiate the patient;

a flat-panel imager coupled to the rotatable gantry, wherein the flat-panel imager is operable to capture image projection data of the patient from the cone-beam radiation source to generate cone-beam computed tomography (CT) volumetric image data of the patient; and

a computing unit, coupled to the rotatable gantry via a communications network, to store the image projection data captured by the flat-panel imager.

Ex. 1001, 8:56–9:6.

D. ASSERTED PRIOR ART

The Petition relies on the following prior art references, as well as a supporting Declaration from Russell J. Hamilton, Ph.D. (Ex. 1016):

D.A. Jaffray et al., *A Volumetric Cone-Beam CT System Based on a 41x41 cm² Flat-Panel Imager*, 4320 *Medical Imaging* 800–807 (2001) (Ex. 1003, “Jaffray 2001”);

Jaffray et al., *Cone-beam Computed Tomography on a Medical Linear Accelerator Using a Flat-Panel Imager*, 558–560 (2000) (Ex. 1005, “Jaffray 2000”);

Jaffray et al., *A Radiographic and tomographic imaging system integrated into a medical linear accelerator for localization of bone and soft-tissue targets*, 45 INT. J. RADIATION ONCOLOGY BIOL. PHYS. 773–789 (1999) (Ex. 1007, “Jaffray JRO 1999”);

Jaffray et al., *Performance of a Volumetric CT Scanner Based Upon a Flat-Panel Imager*, 3659 SPIE 204–214 (1999) (Ex. 1008, “Jaffray SPIE 1999”);
and

Jaffray et al., *Cone-beam computer tomography with a flat-panel imager: Initial performance characterization*, 27 MEDICAL PHYSICS 1311–1323 (2000) (Ex. 1009, “Jaffray June 2000”).

E. ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner asserts the following grounds of unpatentability. Pet. 14.

Reference(s)	Basis	Challenged Claims
Jaffray 2001	§ 102(b)	1, 4, 5, 6, 7, 14, 15, 53, 60, and 61
Jaffray 2001	§ 103(a)	1, 4, 5, 6, 7, 14, 15, 53, 60, and 61
Jaffray 2000	§ 102(b)	1, 4, 5, 6, 7, 14, 15, 53, 60, and 61
Jaffray 2000, Jaffray JRO 1999, and Jaffray SPIE 1999	§ 103(a)	1, 4, 5, 6, 7, 14, 15, 53, 60, and 61
Jaffray June 2000 and Jaffray JRO 1999	§ 103(a)	1, 4, 5, 6, 7, 14, 15, 53, 60, and 61

II. ANALYSIS

A. REAL PARTIES IN INTEREST

The Petition identifies Elekta Ltd. and Elekta AB as the real parties in interest (“RPIs”). Pet. 1. Patent Owner argues that we should deny the Petition under 35 U.S.C. § 312(a)(2) because William Beaumont Hospital (“Beaumont”) and Elekta Holdings U.S. Inc. are both RPIs, yet were not identified. Prelim. Resp. 4–11.

1. Elekta Holdings

In response to Patent Owner’s objection to Petitioner’s failure to identify Elekta Holdings as an RPI, Petitioner filed an unopposed updated mandatory notice adding Elekta Holdings U.S., Inc. as an RPI. Paper 16, 1. The notice moots Patent Owner’s objection to Petitioner’s failure to name Elekta Holdings U.S., Inc. in the Petition. However, during an October 16, 2015 telephone conference, Patent Owner requested that we change the original June 15, 2015 filing date to reflect the date Petitioner amended its RPI disclosures. *See* Paper 17. As outlined below, we exercise our discretion to maintain the Petition’s original filing date despite Petitioner’s amended RPI disclosure.

a. Application of 35 U.S.C. § 312(a) to Amended RPI Disclosures

As a threshold matter, we hold that 35 U.S.C. § 312(a)(2) does not define our jurisdiction with respect to *inter partes* review proceedings. Under § 312(a), a petition “may be considered only if” a number of requirements are satisfied. In addition to requiring identification of all real parties in interest, the other preconditions to consideration in § 312(a) include paying the required fee, providing copies of relevant prior art and other supporting materials, and providing “such other information” as our regulations require. *Id.*

Recognizing the “untoward” and “drastic” consequences of characterizing a rule as jurisdictional, the Supreme Court has taken steps “‘to bring some discipline to the use’ of the term ‘jurisdiction.’” *Sebelius v. Auburn Reg’l Med. Ctr.*, 133 S. Ct. 817, 824 (2013) (quoting *Henderson ex rel. Henderson v. Shinseki*, 562 U.S. 428, 435 (2011)). Specifically, the Court has “adopted a readily administrable bright line for determining

whether to classify a statutory limitation as jurisdictional.” *Sebelius*, 133 S. Ct. at 824 (internal quotation marks omitted). That determination turns on “whether Congress has clearly stated that the rule is jurisdictional; absent such a clear statement, . . . courts should treat the restriction as nonjurisdictional in character.” *Id.* (internal quotation marks and alteration omitted). Section 312(a)’s emphatic “may be considered only if” language does not make those requirements jurisdictional. *See Henderson*, 562 U.S. at 439 (“[W]e have rejected the notion that all mandatory prescriptions, *however emphatic*, are properly typed jurisdictional.” (internal quotation marks and alterations omitted, emphasis added)). Because Congress has not clearly stated that it is jurisdictional, we treat § 312(a) as nonjurisdictional in character. In particular, § 312(a)’s “Requirements of the Petition” are “[a]mong the types of rules that should not be described as jurisdictional” because they are “‘claim-processing rules’ . . . that seek to promote the orderly progress of litigation by requiring that the parties take certain procedural steps at certain specified times.” *Henderson*, 562 U.S. at 435; *see id.* at 438 (holding that a statutory notice of appeal deadline required “[i]n order to obtain review by the Court of Appeals for Veterans Claims” was not jurisdictional); *see also Achates Reference Publ’g, Inc. v. Apple Inc.*, 803 F.3d 652, 658 (Fed. Cir. 2015) (holding that the § 315(b) time-bar does not implicate the Board’s jurisdiction because the time bar “does not itself give the Board the power to invalidate a patent”).

Prior Board decisions have allowed petitioners to correct other § 312(a) issues without changing the original filing date. *See, e.g., Arthrex, Inc. v. Bonutti Skeletal Innovations, LLC*, Case IPR2013-00631, slip op. at 7–8 (PTAB Apr. 16, 2014) (Paper 20) (according original filing date even

though petitioner later supplied copies of foreign-language references as required under § 312(a)(3)(A)); *Schott Gemtron Corp. v. SSW Holding Co. Inc.*, Case IPR2014-00367, slip op. at 3 (PTAB Sept. 22, 2014) (Paper 30) (according original filing date even though petitioner later provided a supporting declaration as required under § 312(a)(3)(B)). Absent a clear statement by Congress, we see no reason to treat the RPI issue differently from the other requirements in § 312(a)—or any regulatory requirement for petitions, *see* § 312(a)(4)—when the statute makes no distinction between those issues. Our governing statutes, including § 312(a), leave the Board with discretion to permit correcting defects in a petition without changing the filing date. *See* 35 U.S.C. § 316(a)(3) (authorizing regulations “establishing procedures for the submission of supplemental information after the petition is filed.”); 37 C.F.R. § 42.5 (authorizing the Board to determine a proceeding’s conduct).

b. Application of 37 C.F.R. §§ 42.106 and 42.5 to Amended RPI Disclosures

37 C.F.R. § 42.106 addresses petitions’ filing dates. Subsection (a) states “[a] petition to institute *inter partes* review will not be accorded a filing date” until it satisfies a number of requirements, which include identifying each RPI. § 42.106(a); *see* §§ 42.104, 42.8(b)(1). Subsection (b) states “[w]here a party files an incomplete petition, no filing date will be accorded.” Section 42.106 does not, however, foreclose the Board’s discretion to maintain a petition’s original filing date when a party amends its RPI disclosures because, under § 42.5(b), “[t]he Board may waive or suspend” § 42.106’s filing date provisions and “may place conditions on the waiver or suspension.”

c. Analysis

Our Trial Practice Guide describes the “core functions” of the RPI requirement as:

to assist members of the Board in identifying potential conflicts, and to assure proper application of the statutory estoppel provisions. The latter, in turn, seeks to protect patent owners from harassment via successive petitions by the same or related parties, to prevent parties from having a “second bite at the apple,” and to protect the integrity of both the USPTO and Federal Courts by assuring that all issues are promptly raised and vetted.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,759 (Aug. 14, 2012). Absent any indication of an attempt to circumvent estoppel rules, a petitioner’s bad faith, or prejudice to a patent owner caused by the delay, permitting a petitioner to amend challenged RPI disclosures while maintaining the original filing date promotes the core functions described in the Trial Practice Guide, while promoting also “the just, speedy, and inexpensive resolution of our proceedings.” 37 C.F.R. § 42.1. In this case, Petitioner agreed to add Elekta Holdings U.S., Inc. as an RPI as soon as Patent Owner raised the issue. There is no indication of intentional concealment or any other bad faith in Petitioner’s delay in identifying the additional RPI. There is also no indication of material benefit to Petitioner as a result of the delay, or negative effect on Patent Owner’s ability to challenge the Petition. Thus, given the facts of this case, and absent any apparent reason to accord a new filing date, we exercise our discretion to

permit Petitioner to add Elekta Holdings U.S., Inc. as an RPI without changing the Petition's original filing date.¹

2. Beaumont

Neither Petitioner's original RPI disclosure nor its updated disclosure identified Beaumont as an RPI. Paper 6, 2; Paper 16, 1. Patent Owner argues that Beaumont is an RPI because Beaumont has a substantive legal relationship with Petitioner in that one of the Petition's named RPIs, Elekta Ltd., "is the exclusive licensee of Beaumont for a set of patents issued to David A. Jaffray, lead author on all of the prior art Petitioner asserts in this proceeding." Prelim. Resp. 7. According to Patent Owner, Beaumont also is a co-plaintiff with Elekta Ltd. and shares counsel in a district court patent infringement case involving the Jaffray Patents against Patent Owner. *Id.* at 8. Patent Owner concludes that, "[g]iven Beaumont's relationship with Petitioner—as a licensor, litigation co-plaintiff, and co-client—Beaumont is adequately represented in this proceeding and should be bound by the trial outcome and related estoppels as a real party-in-interest." *Id.* at 9–10.

¹ Our decision is consistent with prior Board decisions waiving other § 42.106 prerequisites for according a petition its filing date, as well as other regulatory requirements, when doing so promotes efficiency or injects no prejudice. *See, e.g., Micron Tech., Inc. v. e.Digital Corp.*, Case IPR2015-00519, slip op. at 5–6 (PTAB Mar. 24, 2015) (Paper 14) (exercising discretion under § 42.5(b) to waive Rule 42.105(a)'s service requirements, and, thus, declining to change the original filing date); *Facebook, Inc. v. Rembrandt Social Media, L.P.*, Case IPR2014-00415, slip op. 6–7 (PTAB July 7, 2014) (Paper 9) (waiving a "harmless" failure to comply with § 42.105(b)'s service requirements, and, thus, declining to change original filing date); *eBay Enter., Inc. v. Lockwood*, Case CBM2014-00026, slip op. at 11 (May 15, 2014) (Paper 25) (waiving § 42.304(a)'s requirement for providing evidence of standing with the petition).

Our Trial Practice Guide explains that whether a particular entity is a real party-in-interest is a “highly fact-dependent question” assessed “on a case-by-case basis.” 77 Fed. Reg. at 48,759 (citing *Taylor v. Sturgell*, 553 U.S. 880, 893–95 (2008)). Although multiple factors may be relevant to the inquiry, “[a] common consideration is whether the non-party exercised or could have exercised control over a party’s participation in a proceeding.” *Id.* Because we generally accept a petitioner’s identification of RPIs at filing, to challenge that identification a patent owner must provide sufficient rebuttal evidence to bring reasonably into question the accuracy of Petitioner’s identification of RPIs. *See* 77 Fed. Reg. 48,680, 48,695 (Aug. 14, 2012).

On the present record, we are not persuaded that Patent Owner has provided sufficient evidence to bring reasonably into question whether Beaumont is an RPI. Beaumont’s licensing relationship and status as co-plaintiff with a named RPI to this proceeding in a case involving different patents are not enough to suggest Beaumont is an unnamed RPI. *See* 77 Fed. Reg. at 48,760 (noting that a party does not become an RPI to a proceeding merely because it is a co-defendant with a petitioner in a patent infringement suit or through association in an unrelated endeavor). Patent Owner provides insufficient evidence that Beaumont controls, directs, or funds Petitioner’s participation in this proceeding. Likewise, Patent Owner’s assertion that Beaumont should be bound by the trial’s outcome and related estoppel, even if correct, does not make Beaumont an unnamed RPI. Patent Owner’s argument conflates real parties-in-interest with the concept of privity, which “is more expansive, encompassing parties that do not necessarily need to be identified in the petition as a ‘real party-in-

interest.” 77 Fed. Reg. at 48759. On the present record, we are not persuaded that Beaumont is an unnamed RPI.

B. CLAIM CONSTRUCTION

1. Applicable Standard

The Board interprets claims using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b). We presume a claim term carries its “ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question” at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). We construe only those claim terms required to determine whether to institute *inter partes* review. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

2. “a high energy radiation source” and “a cone-beam radiation source”

Independent claims 1, 14, and 53 all require “a high energy radiation source coupled to the rotatable gantry” and “a cone-beam radiation source coupled to the rotatable gantry.” Petitioner argues we should construe these limitations to cover two separate sources or a single source with two different functions. *See* Pet. 8–10 (explaining that the ’021 patent’s claims, Specification, and prosecution history support Petitioner’s construction). Patent Owner does not disagree. Prelim. Resp. 16. For purposes of this Decision, we construe the claimed “high energy radiation source” and “cone beam radiation source” as encompassing embodiments having the same source with two separate functions, and those with two separate sources.

C. ASSERTED PRIOR ART

The five asserted prior-art Jaffray articles describe the evolution of a single-system: a soft-tissue imaging system (cone-beam computed tomography or CBCT) to be used with a medical linear accelerator for image-guided radiation treatment. *See* Pet. 42 (citing Ex. 1016 ¶ 289); Prelim. Resp. 28.

1. *Jaffray 2001 (Ex. 1003)*

Jaffray 2001 describes using a flat panel cone beam imaging system on a linear accelerator. Ex. 1003, 800. Jaffray 2001's Figure 4(a) is reproduced below.

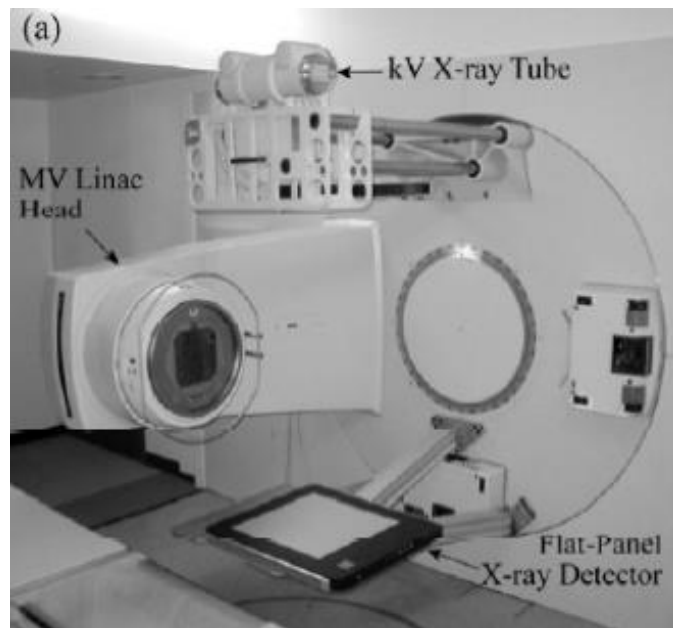


Figure 4(a) depicts a “[f]lat-panel cone-beam CT on a medical linear accelerator.” Ex. 1003, 805. The device includes a rotatable gantry, a megavoltage (MV) radiation source, and a flat panel imager opposite a kilovoltage (kV) X-ray tube. *Id.* at 804, 805.

2. Jaffray 2000 (Ex. 1005)

Jaffray 2000 describes a cone beam flat panel imager on a linear accelerator. Ex. 1005, 558. Jaffray 2000's Figure 3 is reproduced below.

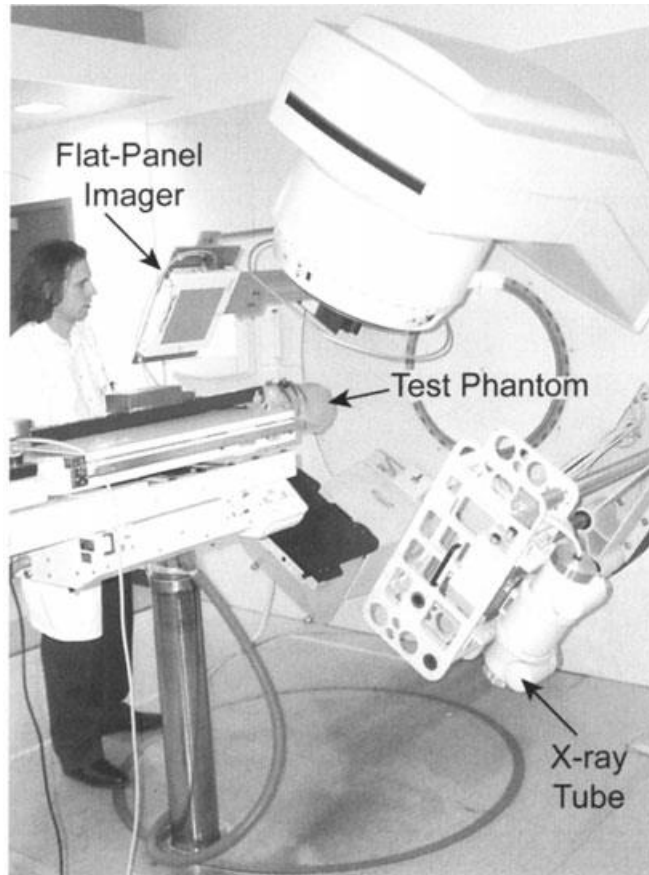


Figure 3 depicts a prototype FPI [flat-panel imager]-based CBCT system on an Elekta SL-20 medical linear accelerator. *Id.* at 559.

3. Jaffray JRO 1999 (Ex. 1007)

Jaffray JRO 1999 discloses a medical linear accelerator with an integrated kV imaging system. Ex. 1007, 773. Jaffray JRO 1999's Figure 1(b) is reproduced below.

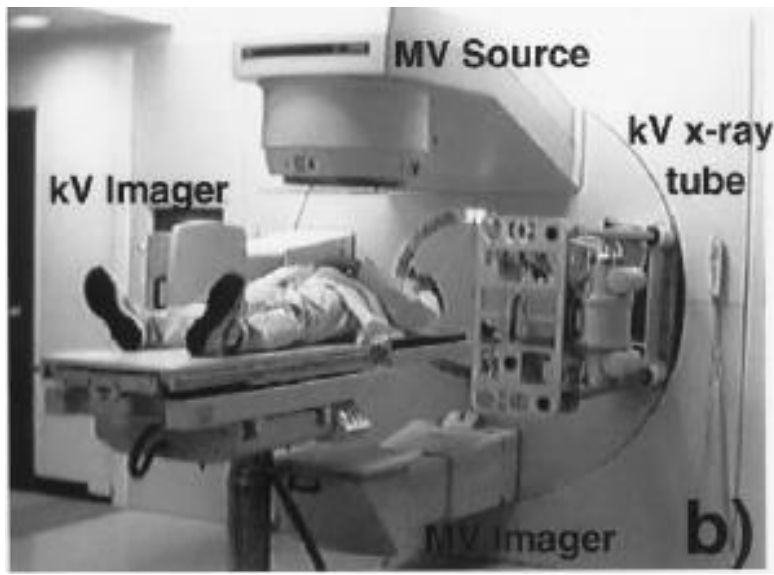


Figure 1(b) depicts a kV x-ray tube and imager integrated into an Elekta SL-20 medical linear accelerator. *Id.* at 775.

4. Jaffray SPIE 1999 (Ex. 1008) and Jaffray June 2000 (Ex. 1009)

Jaffray SPIE 1999 describes details of a CBCT flat-panel imaging system. *See* Ex. 1008, 204, 205–08. Jaffray June 2000 describes a “FPI-based CBCT for bone and soft-tissue localization in radiotherapy.” Ex. 1009, 1311.

D. ASSERTED GROUNDS

1. Ground 1: Anticipation Based on Jaffray 2001 (Ex. 1003)

Petitioner contends that Jaffray 2001 anticipates each challenged claim. Pet. 15–26. On the current record, we determine that Petitioner has set forth a reasonable likelihood of succeeding on this challenge, as outlined below.

a. “a rotatable gantry coupled to the frame.”

All of the challenged independent claims (claims 1, 14, and 53) require “a frame” and “a rotatable gantry coupled to the frame.” Patent Owner asserts that we should deny the Petition because Petitioner

incorrectly relies on the same drum structure in the cited prior art to satisfy the claimed frame and rotatable gantry coupled to the frame. Prelim. Resp. 14–15. We disagree with Patent Owner’s characterization of the Petition. It is clear from the Petition, and the Declaration cited as support, that Petitioner relies on the cited art’s “drum structure” and separate “gantry” as disclosing the claimed rotatable gantry coupled to the frame. *See, e.g.*, Pet. 15 (explaining that the cited reference’s “linear accelerator has a rotatable gantry supported on a frame”), 18–19 (emphasizing both the cited art’s “drum structure” and “gantry”); Ex. 1016 ¶ 137 (same). We find, for purposes of this Decision, Petitioner has shown adequately that Jaffray 2001 discloses “a frame” and “a rotatable gantry coupled to the frame,” as independent claims 1, 14, and 53 require.

b. “a radiation treatment system capable of implementing a treatment plan, the system comprising”

All of the challenged independent claims require “a radiation treatment system capable of implementing a treatment plan, the system comprising . . . a high-energy radiation source coupled to the rotatable gantry . . . [and] a flat-panel imager coupled to the rotatable gantry.” Patent Owner argues that the cited prior art does not anticipate the challenged claims because, in the Jaffray Gantry Prototype references, there is no disclosure “that the radiation treatment source could be used to implement treatment plans while the custom-built accessories were affixed.” Prelim. Resp. 18. Patent Owner points out that one of the references that describes the same linear accelerator used in Jaffray 2001 “indicate[s] that removing the custom built imagers from the gantry of the linear accelerator was necessary in order for the accelerator to implement a radiation treatment plan as recited in the claim.” *Id.* at 17. For support, Patent Owner cites Exhibit

1007, which states the Jaffray Gantry Prototype “design allows normal operation of the accelerator with the imagers removed and the kV x-ray tube retracted.” Ex. 1007, 775; Prelim. Resp. 18, 20.

We disagree with Patent Owner’s argument. The cited material indicates that the disclosed system *permits* radiation therapy with the imagers removed, not that radiation therapy requires it, as Patent Owner suggests. Moreover, Jaffray 2001, which is Petitioner’s asserted anticipatory reference, states that the disclosed prototype is “for on-line image-guided radiation therapy” and touts “the suitability of this technology for intra-therapeutic guidance.” Ex. 1003, 800. In light of that disclosure, we find, for purposes of this Decision, Petitioner has shown adequately that Jaffray 2001 discloses “a radiation treatment system capable of implementing a treatment plan.”

c. Undisputed Limitations

We find also, based on this record and for purposes of this Decision, that Jaffray 2001 discloses the challenged claims’ remaining, undisputed limitations. *See* Pet. 18–26. In particular, Petitioner has made an adequate showing that Jaffray 2001 discloses the claimed radiation treatment system including a frame, rotatable gantry, high-energy radiation source, cone-beam radiation source, and flat-panel imager recited in independent claims 1, 14, and 53. *See* Pet. 18–26. Petitioner has made an adequate showing that Jaffray 2001 discloses also the claimed computing unit to store image projection data (claim 1) and translatable treatment couch (claims 14 and 60). *See id.* at 21, 23–24, 25. In addition, Petitioner has made an adequate showing that Jaffray 2001 discloses the additional features recited in the challenged dependent claims, including that the computing unit generates a

three-dimensional image of a target volume based on the captured image projection data (claim 4), the cone-beam CT radiation source is a kilovoltage radiation source and the high-energy radiation source is a megavoltage radiation source (claims 5 and 7), the translatable treatment couch is capable of movement in three planes plus angulation (claims 15 and 60), and the rotatable gantry is capable of 360 degree rotation (claims 6 and 61). *See id.* at 21–22, 24, 25–26. On this record, and for purposes of this Decision, Petitioner has shown a reasonable likelihood that it would prevail in establishing Jaffray 2001 anticipates the challenged claims.

2. Ground 2: Obviousness Based on Jaffray 2001 (Ex. 1003)

Petitioner contends the challenged claims would have been obvious over Jaffray 2001 at the time of the invention. Pet. 26–27. On the current record, we determine that Petitioner has set forth a reasonable likelihood of succeeding on this challenge, as outlined below.

In addition to the arguments that Patent Owner raised to dispute anticipation by Jaffray 2001, Patent Owner’s only additional argument against Petitioner’s obviousness case is characterizing it as an improper attempt to bootstrap obviousness to anticipation, without supplying any substantive analysis under the proper obviousness framework. Prelim. Resp. 21–24. We disagree. The Petition explains, with relevant support from Petitioner’s Declarant, that to the extent Jaffray 2001 fails to disclose the claimed translatable treatment couch, including one would have been obvious because, by 1981, it was standard to use such couches on linear accelerators. *See* Pet. 26–27 (citing Ex. 1016 ¶ 36; Ex. 1015, 220; Ex. 1010, 1, 2, 12, 39–48). The Petition explains also that to the extent Jaffray 2001 fails to disclose a computing unit to capture and store image projection data,

including one would have been obvious to one skilled in the art because “to process the image projection data to generate volumetric images, it is necessary to store the image projection data in the computer which will process the data.” Pet. 27 (citing 1016 ¶ 207). Thus, the Petition identifies potential differences between the cited references and the claimed subject matter and provides adequate rationale as to why those differences would have been obvious, the merits of which Patent Owner does not address. *See* Prelim. Resp. 21–25. Based on the record before us, Petitioner has shown a reasonable likelihood that it would prevail in establishing that the challenged claims would have been obvious over Jaffray 2001.

3. *Ground 3: Anticipation Based on Jaffray 2000 (Ex. 1005)*

Petitioner contends that Jaffray 2000 anticipates the challenged claims. Pet. 27–42. On the current record, we determine that Petitioner has set forth a reasonable likelihood of succeeding on its anticipation challenge based on Jaffray 2000, as outlined below.

In contesting anticipation based on Jaffray 2000, Patent Owner asserts the same arguments as those related to Jaffray 2001—i.e., that (1) Petitioner incorrectly relies on the same drum structure in the cited art to satisfy the claimed frame and rotatable gantry coupled to the frame, and (2) Jaffray 2000 fails to disclose a radiation treatment system capable of implementing a treatment plan. *See* Prelim. Resp. 14–15, 18–21. We disagree. As to the first argument, the Petition and supporting declaration rely on separate structures for the frame and rotatable gantry in Jaffray 2000. *See* Pet. 33; Ex. 1016 ¶ 219 (“Jaffray 2000 discloses the Elekta SL-20 linear accelerator, which . . . has a gantry rotably coupled to a supporting structure.”). As to Patent Owner’s treatment-plan argument, Jaffray 2000 notes that the system

“must also be capable of producing multiple images over the course of treatment — preferably with the patient in treatment position.” Pet. 32 (citing Ex. 1005, 558). On this record, Petitioner has shown adequately that Jaffray 2000 discloses both a rotatable gantry coupled to a frame and a radiation treatment system capable of implementing a treatment plan.

We are persuaded also, based on this record and for purposes of this Decision, that Jaffray 2000 discloses the challenged claims’ remaining, undisputed limitations. *See* Pet. 27–42. For example, Petitioner has made an adequate showing that Jaffray 2000 discloses the claimed radiation treatment system including a frame, rotatable gantry, high-energy radiation source, cone-beam radiation source, and flat-panel imager, as recited in independent claims 1, 14, and 53. *See* Pet. 31–36, 38–39, 40–41. In addition, Petitioner has made an adequate showing that Jaffray 2000 discloses the claimed computing unit to store image projection data (claim 1) and translatable treatment couch (claims 14 and 60). *See id.* at 35–36, 39, 41. Petitioner has made an adequate showing that Jaffray 2000 discloses also the additional features recited in the remaining challenged claims, including that the computing unit generates a three-dimensional image of a target volume based on the captured image projection data (claim 4), the cone-beam CT radiation source is a kilovoltage radiation source and the high-energy radiation source is a megavoltage radiation source (claims 5 and 7), the translatable treatment couch is capable of movement in three planes plus angulation (claims 15 and 60), and the rotatable gantry is capable of 360 degree rotation (claims 6 and 61). *See id.* at 36–38, 39–40, 41–42. On this record, and for purposes of this Decision, Petitioner has shown a

reasonable likelihood that it would prevail in establishing Jaffray 2000 anticipates the challenged claims.

4. Ground 4: Obviousness Based on Jaffray 2000 (Ex. 1005), Jaffray JRO 1999 (Ex. 1007), and Jaffray SPIE 1999 (Ex. 1008)

Petitioner contends that the challenged claims would have been obvious over Jaffray 2000, Jaffray JRO 1999, and Jaffray SPIE 1999. Pet. 42–43. On the current record, we determine that Petitioner has set forth a reasonable likelihood of succeeding on its obviousness challenge, as outlined below.

In contesting obviousness over Jaffray 2000, Jaffray JRO 1999, and Jaffray SPIE 1999, Patent Owner asserts the same arguments as those related to obviousness over Jaffray 2001—i.e., that Petitioner is attempting to bootstrap obviousness to its anticipation challenge without supplying any substantive analysis under the proper obviousness framework. Prelim. Resp. 21–24. We disagree. The Petition explains, with supporting citations to relevant testimony and evidence, that a person skilled in the art would have reason to combine the medical linear accelerator described in Jaffray JRO 1999 and the flat panel imager described in Jaffray SPIE 1999 with Jaffray 2000 because Jaffray 2000 explicitly references using those elements. Pet. 42–43; Ex. 1016 ¶¶ 289–290. In addition, the Petition explains that given Jaffray 2000’s reference to linear accelerators generally, “standard features” such as a “rotatable gantry on a frame, megavoltage treatment source, treatment couch capable of translatable movement and angulation and operation via communications network,” would have been obvious to a person skilled in the art. Pet. 43 (citing Ex. 1005, 558, 559, Fig. 3; Ex. 1015, 220; Ex. 1016 ¶¶ 290–291). Based on the current record, Petitioner has shown a reasonable likelihood that it would prevail in establishing that

the challenged claims would have been obvious over Jaffray 2000, Jaffray JRO 1999, and Jaffray SPIE 1999.

5. Ground 5 Obviousness Based on Jaffray June 2000 (Ex. 1009) and Jaffray JRO 1999 (Ex. 1007)

Petitioner contends that the challenged claims would have been obvious over Jaffray June 2000 and Jaffray JRO 1999. Pet. 43–59. On the current record, we determine that Petitioner has set forth a reasonable likelihood of succeeding on its obviousness challenge, as outlined below.

In disputing obviousness based on Jaffray June 2000 and Jaffray JRO 1999, Patent Owner reiterates its argument that none of the cited references disclose or suggest “that such a modified accelerator . . . is capable of implementing a treatment plan.” Prelim. Resp. 25. We disagree. Jaffray June 2000 teaches that “an imaging system based on this technology will be installed on a conventional radiotherapy linear accelerator.” Ex. 1009, 1312; *see* Pet. 48. In light of that disclosure, and absent persuasive evidence suggesting that normal operation of the accelerator requires removing the imagers and kV x-ray tube, we find Petitioner has shown adequately that the combined teachings of Jaffray June 2000 and Jaffray JRO 1999 at least suggest a radiation treatment system capable of implementing a treatment plan.

We find also that Petitioner has made an adequate showing that the combined teachings of Jaffray June 2000 and Jaffray JRO 1999 disclose also the other undisputed features recited in the challenged claims, *see* Pet. 48–59, and has provided sufficient reasoning for why one skilled in the art would have been motivated to combine the references, *see* Pet. 46–59 (noting that Jaffray June 2000 recognized the “significant potential for use of these detectors in CBCT systems for radiotherapy”). Based on the record

before us and for purposes of the Decision, Petitioner has shown a reasonable likelihood that it would prevail in establishing that the challenged claims would have been obvious over Jaffray June 2000 and Jaffray JRO 1999.

III. Discretion to Decline to Institute Under 35 U.S.C. § 325(D)

Section 325(d) provides that “[i]n determining whether to institute or order a proceeding . . . the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” Patent Owner asserts that we should exercise our § 325(d) discretion and decline institution because “[t]he art relied upon for Petitioner’s grounds of anticipation and obviousness contains identical information that was before the Examiner during prosecution.” Prelim. Resp. 26. According to Patent Owner, “the Petition relies on articles that describe features of the Jaffray Benchtop Prototype and Jaffray Gantry Prototype,” and those articles “disclose the *same system* that was considered by the Examiner” during prosecution. *Id.* at 26, 28.

We decline to deny the Petition under § 325(d). Four of the Petition’s five asserted grounds rely on either Jaffray 2000 or Jaffray 2001, neither of which was before the Examiner during prosecution. *See* Pet. 12–13; Prelim. Resp. 26–27. Although the other asserted ground is based on two references cited on the ’021 patent’s face, the Examiner did not cite or discuss either one. Pet. 12–13. In addition, we do not find it significant that the asserted prior art references describe the “same system” as other references that the Examiner considered. Petitioner’s challenge is based on the asserted references’ disclosures, not the physical systems described in those

references. It does not follow that different references' disclosures necessarily are the same just because the physical system they describe is. Based on the record before us, we do not find that "the same prior art or arguments previously were presented to the Office," as outlined in § 325(d). Accordingly, we decline to exercise our discretion under § 325(d).

IV. CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in showing the challenged claims unpatentable. Any discussion of facts in this Decision is made only for the purposes of institution of *inter partes* review and is not dispositive of any issue related to any ground on which we institute review. The Board's final determination will be based on the record as fully developed during trial.

V. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 of the '021 patent is instituted, commencing on the entry date of this Decision;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; and

FURTHER ORDERED that the trial is limited to the following grounds of unpatentability:

- A. claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Jaffray 2001;

B. claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 are unpatentable under 35 U.S.C. § 103(a) over Jaffray 2001;

C. claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Jaffray 2000;

D. claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 are unpatentable under 35 U.S.C. § 103(a) over Jaffray 2000, Jaffray JRO 1999, and Jaffray SPIE 1999;

E. claims 1, 4, 5, 6, 7, 14, 15, 53, 60, and 61 are unpatentable under 35 U.S.C. § 103(a) over Jaffray June 2000 and Jaffray JRO 1999;
and

FURTHER ORDERED that no other grounds are authorized for *inter partes* review.

Opinion Dissenting-in-Part filed by *Administrative Patent Judge*
BOUCHER

I agree with, and join, all of the majority's decision except Section (II)(A)(1)(c). Although I agree with, and join, the majority's holding that 35 U.S.C. § 312(a) does not set forth prerequisites to the Board's jurisdiction, and that the Board has discretion under 37 C.F.R. § 42.5 to "waive or suspend" the filing-date provisions of 37 C.F.R. § 42.106, I respectfully dissent from the majority's exercise of that discretion in this proceeding. The facts presented to us with respect to Petitioner's addition of Elekta Holdings U.S., Inc., as a real party-in-interest are unexceptional. Notably, there is no evidence that conforming the Petition's filing date to when Petitioner satisfied the specified requirements would have any meaningful impact because no time bar under 35 U.S.C. § 315(b) would be implicated by such a change.

I recognize the consequences of the Board's prior decisions enforcing the filing-date provisions of 37 C.F.R. § 42.106. Patent owners have capitalized on the rule as a means for having petitions denied on a basis unrelated to the merits presented in the petitions. But given the routine circumstances of this proceeding, the majority's exercise of the broad discretion of 37 C.F.R. § 42.5 is unwarranted and unnecessarily subverts the Board's rule.

Because of the estoppel provisions of 35 U.S.C. § 315(e), allowing petitioners to identify additional real parties-in-interest, without a change in a petition's filing date, has potentially wide ramifications. Various strategic considerations may encourage concealment by petitioners, or other forms of gamesmanship related to the timing of disclosing real parties-in-interest, that

Case IPR2015-01401
Patent 7,945,021 B2

otherwise are discouraged by our current rules. The majority's deviation from the Board's rules is unneeded in this case, and the Board has other mechanisms available to it to revisit the overall framework of those rules. Accordingly, I respectfully dissent-in-part.

Case IPR2015-01401
Patent 7,945,021 B2

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