Trials@uspto.gov
571-272-7822

Paper 11
Date: November 14, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.,
Petitioner,

v.

APEX BEAM TECHNOLOGIES LLC,
Patent Owner.

IPR2025-00910
Patent 10,979,128 B1

Before JUSTIN T. ARBES, KEVIN W. CHERRY, and JOHN D. HAMANN, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Apple Inc. ("Petitioner") filed a petition to institute *inter partes* review of claims 1–19 of U.S. Patent No. 10,979,128 B1 (Ex. 1001, "the '128 patent"). Paper 2 ("Pet."). Apex Beam Technologies LLC ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp.").

Patent Owner's request for discretionary denial was denied and the Petition was forwarded to the Board. Paper 10. We have authority under 35 U.S.C. § 314 to determine whether to institute an *inter partes* review. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." The Supreme Court has held that the Board, in a decision to institute under 35 U.S.C. § 314(b), may not institute review on less than all claims challenged in the petition. *SAS Inst. Inc. v. Iancu*, 584 U.S. 357, 363–66 (2018). Moreover, in accordance with our rules, "[w]hen instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim." 37 C.F.R. § 42.108(a) (2024); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition").

Applying those standards, and upon considering the Petition, the Preliminary Response, and the evidence of record, we determine the information presented demonstrates a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the

challenged claims of the '128 patent. Accordingly, we institute an *inter partes* review.

II. BACKGROUND

A. Related Matters

The parties identify the following district-court proceeding as a related matter involving the '128 patent: *Apex Beam Technologies LLC v. Apple Inc.*, Case No. 6:24-cv-00223-ADA (W.D. Tex.). Pet. 90; Paper 4, 2 (Patent Owner's Mandatory Notices).

Petitioner also identifies *Apex Beam Technologies LLC v. Samsung Electronics Co., Ltd. et al.*, 2-24-cv-00203 (E.D. Tex.). Pet. 90. Petitioner further states that it is "concurrently filing a petition for *inter partes* review of U.S. Patent No. 11,637,615, which is a continuation of the '128 [p]atent," identifying IPR2025-00911. *Id.*

B. Real Parties in Interest

Petitioner identifies Apple Inc. as a real party-in-interest. Pet. 90. Patent Owner identifies Apex Beam Technologies LLC as a real party-in-interest. Paper 4, 2.

C. The '128 Patent

The '128 patent is titled "Beam Failure and Consistent Listen Before Talk Failure Recovery." Ex. 1001, Code (54). The '128 patent issued from Application Serial No. 17/113,851, filed Dec. 7, 2020. *Id.* at Codes (21), (22). The '128 patent claims priority to U.S. provisional application 62/945,154, filed on Dec. 7, 2019. *Id.* at Code (60).

The '128 patent relates to "operation of a wireless device and/or one or more base stations in unlicensed or shared spectrum and/or using beamforming," and more particularly to "beam failure and consistent

listen-before-talk (LBT) failure recovery." *Id.* at 3:25–32. According to the '128 patent, "[a] wireless device may be configured with a beam failure recovery procedure and may use a beam failure detection process to detect beam failures." *Id.* at 45:5–7. The '128 patent states that "[b]eam failure may be detected/determined based on a beam failure detection process comprising counting beam failure instance indications/notifications from the physical layer to a [medium access control (MAC)] entity," and that "[t]he wireless device may start a beam failure recovery procedure based on the detecting/determining the beam failure on a cell." *Id.* at 45:8–14. The '128 patent explains that "[t]he beam failure recovery may be based on performing a random access process, for example on a primary cell." *Id.* at 45:14–16.

The '128 patent further states that "[t]he wireless device may detect consistent LBT for transmission failures on one or more cells and may perform a random access process to recover from the consistent LBT failures on the one or more cells." *Id.* at 45:16–19. According to the '128 patent, "[w]hen the one or more cells have consistent LBT failures and one or more second cells have beam failure, there may be a conflict between the consistent LBT failures recovery process and the beam failure recovery process." *Id.* at 45:19–23. The '128 patent explains that, "[e]xisting solutions for beam failure and consistent LBT failure recovery processes may lead to degraded wireless device and network performance," and acknowledges a "need to enhance the existing beam failure and consistent LBT failures recovery processes." *Id.* at 45:23–27. In response, the '128 patent teaches "embodiments [that] enhance the configuration beam failure and consistent LBT failures recovery process." *Id.* at 45:27–29.

D. The Challenged Claims

Petitioner challenges claims 1–19 of the '128 patent. Pet. 2. Of the challenged claims, claim 1 is independent, and is reproduced below with Petitioner's identifiers for the claim limitations, as illustrative of the subject matter recited in the challenged claims.

[1pre] A method comprising:

[1a.i] receiving, by a wireless device, one or more messages comprising:

[1a.ii] first configuration parameters for beam failure recovery, comprising first random access parameters;

[1a.iii] second configuration parameters for listen-before-talk (LBT) failure recovery; and

[1a.iv] second random access parameters;

[1b] initiating, based on the first configuration parameters and in response to detecting a beam failure on a primary cell, a first random access process on a first bandwidth part (BWP) of the primary cell for beam failure recovery based on the first random access parameters;

[1c] triggering, based on the second configuration parameters, consistent LBT failure for the primary cell;

[1d] stopping the first random access process, for the beam failure recovery, based on the triggering the consistent LBT failure;

[1e] switching from the first BWP of the primary cell to a second BWP of the primary cell as an active BWP of the primary cell; and

[1f] initiating a second random access process on the second BWP of the primary cell for consistent LBT failure recovery and based on the second random access parameters.

Ex. 1001, 75:63–76:21.

E. Selected Evidence

Evidence	Exhibit No.
Declaration of Robert Akl, D.Sc.	1003
Cirik et al., US 2021/0100031 A1 (published Apr. 1, 2021, filed Sept. 30, 2020, provisional application filed Sept. 30, 2020) ("Cirik")	1004
Wu et al., US 2022/0110153 A1 (published Apr. 7, 2022, PCT filed Feb. 13, 2019) ("Wu")	1006
R2-1914882, Handling UL LBT Failures in MAC, 3GPP RAN WG2 Meeting #108, InterDigital ("InterDigital")	1007

F. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–19	103[1]	Cirik
1–19	103	Cirik, Wu
1–19	103	Cirik, InterDigital
1, 10, 16–19	103	Wu, InterDigital
2–9, 11–15	103	Wu, InterDigital, Cirik

Pet. 2–3.

III. PATENTABILITY ANALYSIS

Petitioner contends that claims 1–19 of the '128 patent are unpatentable under 35 U.S.C. § 103 over various combinations of Cirik, Wu, and InterDigital. Pet. 2–3.

[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. § 103. Because the '128 patent has an effective filing date after the effective date of the applicable AIA amendment, we refer to the AIA version of § 103.

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time of the effective filing date to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.[2] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

We organize our patentability analysis into four sections. First, we address the level of ordinary skill in the art. Second, we address claim construction. Third, we provide an overview of the asserted references.

[2] Patent Owner does not present evidence of secondary considerations in its Preliminary Response. Therefore, secondary considerations do not constitute part of our analysis herein.

And fourth, taking account of the information presented, we consider whether the Petition satisfies the threshold requirement for instituting an *inter partes* review under 35 U.S.C. § 314(a).

A. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. In assessing the level of ordinary skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). "[O]ne or more factors may predominate." *Id.*

Relying on the declaration testimony of Dr. Akl, Petitioner contends that an ordinarily skilled artisan for the '128 patent "would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a similar field, along with two years of experience designing or developing wireless networks, including long-term evolution LTE/4G or 5G new radio (NR) cellular technology." Pet. 4. Petitioner additionally contends that "[a]dditional years of experience could substitute for an advanced-level degree (and vice versa)." *Id.*

Patent Owner states that "[f]or the purposes of this Preliminary Response only, Patent Owner utilizes Petitioner's proposed level of skill in the art." Prelim. Resp. 2.

Based on this record, we adopt Petitioner's articulation of the level of ordinary skill in the art, which is consistent with the '128 patent and the

asserted prior art, and we apply it in our obviousness evaluations below. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art).

B. Claim Construction

In interpreting the claims of the '128 patent, we "us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b)." *See* 37 C.F.R. § 42.100(b) (2024). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

Petitioner contends that "no formal construction are presently necessary for purposes of demonstrating obviousness of the Challenged Claims based on [the asserted grounds]." Pet. 9. Patent Owner does not at this time address claim construction. *See generally* Prelim. Resp.

Having considered the record, we determine that no express claim construction is necessary for any claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). We note, however, there may be some claim terms below whose constructions the parties may wish to address during trial.

C. The Prior Art

Before turning to Petitioner's asserted grounds of unpatentability, we provide brief summaries of the asserted references.

1. Cirik (Ex. 1004)

Cirik is titled "Communication Channel Failure Detection and Recovery." Ex. 1004[3], code (54). Cirik was filed on September 30, 2020, and claims priority to a provisional application, U.S. Provisional Application No. 62/908,473 (Ex. 1005), filed on September 30, 2019. *Id.* at codes (22), (60). Cirik explains that "[m]ultiple communication devices use a same communication channel for transmission and/or reception of signals," and that "[a] communication device determines channel availability for transmission of signals to avoid interfering with communications from other communication devices." *Id.* ¶ 2.

Cirik describes a "communication for an LBT failure recovery and a beam failure recovery." *Id.* ¶ 304. According to Cirik, a wireless device may detect a beam failure based on a quantity of beam failure indications reaching/exceeding a maximum quantity of beam failures defined for a beam failure counter. *Id.* ¶ 305. Then, according to Cirik, the wireless device may initiate a random access procedure for a beam failure recovery procedure. *Id.* ¶ 306.

[3] Petitioner notes that the "Cirik Provisional [(Ex. 1005)] is incorporated by reference in Cirik." *See* Pet. 10 n.2; Ex. 1004 ¶ 1. The Petition cites and refers to disclosure from Cirik Provisional as part of Cirik due to its incorporation by reference. Petitioner notes that "[t]he teachings of Cirik Provisional were also carried into the text/figures of Cirik's non-incorporated disclosure." Pet. 11 n.3 (citing Ex. 1003 ¶¶ 41–43, 50). For simplicity and consistency, we also cite to the Cirik provisional application in the analysis section.

Cirik teaches that "[t]he wireless device . . . may detect/determine/declare [an] uplink LBT failure . . . during the (ongoing) beam failure recovery procedure." *Id.* ¶ 307. Cirik further teaches that the wireless device "may suspend the (ongoing) beam failure recovery procedure until [an] LBT failure recovery procedure is completed," and "may resume the (ongoing) beam failure recovery procedure based on (e.g., after) the LBT failure recovery procedure being completed." *Id.* ¶ 308.

2. Wu (Ex. 1006)

Wu is entitled "Bandwidth Part Switching Due to LBT Failure." Ex. 1006, code (54). Wu relates to "determining, at a terminal device, whether continuous Listen-Before-Talk (LBT) failures occur on a first bandwidth part (BWP)," and "in response to . . . continuous LBT failures occurring on the first BWP, switching to a second BWP different from the first BWP." *Id.* at code (57).

Wu explains that

> in response to a beam failure being detected on the first BWP and a beam failure recovery (BFR) procedure being triggered, the terminal device . . . may determine that continuous beam failures occur on the first BWP, since the beam failure on the first BWP may be probably caused by continuous LBT failures as well.

Id. ¶ 70.

3. InterDigital (Ex. 1007)

InterDigital is titled "Handling UL LBT Failures in MAC." Ex. 1007, 1. InterDigital discloses "details for handling [uplink (UL)] LBT failures in MAC, including a detection, recovery, and reporting behaviour." *Id.* InterDigital teaches "initiat[ing] a new RA procedure upon switching to another BWP, i.e. to ensure the preamble counter and the power ramping

counter are reset." *Id.* at 1–2. According to InterDigital, "[u]pon BWP switching caused by detection of consistent uplink LBT failures on SpCell, the MAC entity shall stop the ongoing RA procedure -if any- and initiate a new RA procedure on the active BWP." *Id.* at 2.

D. Alleged Ground of Unpatentability Over Cirik

Petitioner contends that claims 1–19 of the '128 patent are unpatentable under 35 U.S.C. § 103 as obvious over Cirik. Pet. 11–63. Patent Owner opposes. Prelim. Resp. 3–4.

1. Claim 1

a) [1pre] "A method comprising:"

Petitioner asserts that to the extent the preamble is limiting, Cirik renders it obvious. Pet. 11–12 (Ex. 1005 ¶¶ 306–310, Fig. 21; Ex. 1003 ¶ 49). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses the preamble. Thus, based on Petitioner's arguments and evidence, we find that, to the extent the preamble is limiting, Petitioner has shown sufficiently that Cirik discloses the preamble.

b) [1a.i] "receiving, by a wireless device, one or more messages comprising:"

Petitioner asserts Cirik renders obvious this limitation. Pet. 12–13 (citing Ex. 1005 ¶¶ 161–163, 207–209, 215–218, 307–310; Ex. 1003 ¶¶ 51–59). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

c) *[1a.ii] "first configuration parameters for beam failure recovery, comprising first random access parameters;"*

Petitioner asserts Cirik renders obvious this limitation. Pet. 13–17. Petitioner submits that Cirik's wireless device receives "configuration parameters" that "indicate the maximum number of beam failure[s]." *Id.* at 13–14 (citing Ex. 1005 ¶ 307, Fig. 21; Ex. 1003 ¶ 52). Petitioner argues that "Cirik explains that 'the wireless device may detect the beam failure based on a number of beam failure instance indications (e.g., Beam failure indications in FIG. 21) reaching a maximum number of beam failure counter (e.g., maximum number of beam failures in FIG. 21).'" *Id.* at 14 (citing Ex. 1005 ¶ 307). Petitioner provides an annotated version of Figure 21 of Cirik, which illustrates an example of "beam failure" and the "LBT failure recovery procedure." *Id.*

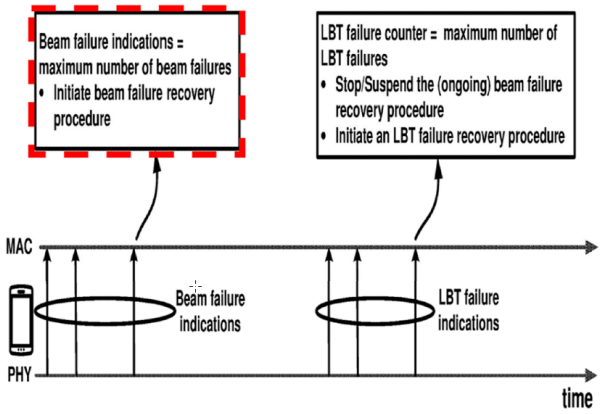


FIG. 21

Figure 21, as annotated above, highlights the statement that the "Beam failure indications = maximum of beam failures [—] initiate beam failure recovery procedures."

Petitioner notes that Cirik also states that "[t]he one or more configuration parameters may indicate the maximum number of beam failure

counter for the active downlink BWP of the second cell." *Id.* (citing Ex. 1005 ¶¶ 103, 307). Petitioner asserts that "Cirik explains that 'second cell' can be the primary cell (e.g., 'PCell')." *Id.* at 14–15 (citing Ex. 1005 ¶ 103). Petitioner contends that "Cirik's first configuration parameters for beam failure recovery thus include parameters substantially the same as those disclosed in the '128 [p]atent itself." *Id.* at 15 (citing Ex. 1001, 63:9–12, 41:65-67; Ex. 1003 ¶ 53).

Petitioner further argues that "Cirik also discloses, in connection with random access (RA) procedures initiated for beam failure recovery, that the base station transmits a configuration message to the wireless device, e.g., as illustrated in each of FIGS. 13A–C." *Id.* (citing Ex. 1005 ¶¶ 152, 161–164, Figs. 13A–C). Petitioner asserts that "[t]he 'configuration message' for random access procedures include[s] 'one or more random access channel (RACH) parameters.'" *Id.* (citing Ex. 1005 ¶¶ 151–154, 156, 161; Ex. 1003 ¶¶ 54–55). Petitioner argues that "[t]he RACH parameters included in a configuration message can include indications of 'one or more Physical RACH (PRACH) occasions available for transmission' of a random-access preamble message and information for determining a power level for the transmission." *Id.* (citing Ex. 1005 ¶¶ 153–154). Petitioner asserts that "[t]he configuration parameters for random access processes used in connection with beam failure recovery, such as the parameters that indicate PRACH resources for beam failure recovery, correspond to '*first random access parameters*' as claimed." *Id.* at 15–16 (citing Ex. 1005 ¶¶ 152–154, 161–163, 208, 304, 332, Fig. 13B; Ex. 1003 ¶¶ 54–56).

Patent Owner responds that "Petitioner fails to address, or advance any support for, the limitation that the first configuration parameters

comprise first random access parameters." Prelim. Resp. 3. Patent Owner notes the Petition's identification of the "maximum number of beam failures" and "various RACH or PRACH parameters" in its discussion of this limitation. *Id.* at 4. Patent Owner argues that "at no point does Petitioner assert that the configuration message for first random access parameters is included within the 'one or more configuration parameters [that] indicate the maximum number of beam failures' that it identifies for the 'first configuration parameters' limitation." *Id.* Patent Owner submits that "[n]or do any of Petitioner's citations support a conclusion that the Cirik's parameter 'indicating the maximum number of beam failure[s]' further comprises any 'first random access parameters,' let alone the specific RACH or PRACH parameters that it identifies." *Id.* at 4–5. Patent Owner contends that "[h]aving entirely failed to address the claimed requirement that the first configuration parameters for beam failure recovery must 'comprise' the first random access parameters, Petitioner cannot show any reasonable likelihood that it would prevail as to any claim." *Id.* at 5.

On the current record, we find that Petitioner has shown sufficiently that Cirik teaches the claimed "first configuration parameters for beam failure recovery, comprising first random access parameters." *See* Pet. 13–17. Patent Owner argues that Petitioner fails to address this limitation, but we disagree. Prelim. Resp. 3. As we have set out above, Petitioner has provided a detailed mapping of what disclosures of Cirik (and Cirik's provisional) on which it relies. Based on the current record, we see nothing incorrect in Petitioner identifying multiple parameters as making up the "first configuration parameters for beam failure recovery." As the plain language of claim 1 makes clear, there are "parameters"—plural—not just

one. We also find, on the current record, that those "parameters" are not limited by the claim to only "random access parameters." The disputed claim limitation uses the transitional phrase "comprising" in reciting the "first configuration parameters for beam failure recovery." As courts have explained, "[i]n the parlance of patent law, the transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." *Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc.*, 246 F.3d 1336, 1348 (Fed. Cir. 2001). Claim 1 recites "first configuration parameters for beam failure recovery, comprising first random access parameters." Thus, we agree with Petitioner that the "first configuration parameters for beam failure recovery" can—but are not required to—include additional parameters (i.e., in addition to the recited "first random access parameters"). Here, we find that, on the current record, Petitioner has shown sufficiently Cirik's "one or more configuration parameters [that] may indicate the maximum number of beam of beam failure counter" is such a parameter for beam failure recovery. Ex. 1005 ¶ 307; Ex. 1003 ¶ 52. As Petitioner correctly notes, these are substantially the same as examples of "first configuration parameters for beam failure recovery" identified in the '128 patent. *See* Pet. 15 (citing Ex. 1001, 63:9–12, 41:65–67; Ex. 1003 ¶ 53).

Petitioner has further sufficiently shown that Cirik also discloses that as part of its beam failure recovery process, Cirik initiates certain "random access (RA) procedures." *Id.* (citing Ex. 1005 ¶ 152, 161–164, Figs. 13A–C). As part of these RA procedures, we agree that Cirik discloses sending a configuration message including "one or more random access channel (RACH) parameters." *Id.* (citing Ex. 1005 ¶¶ 151–154, 156, 161; Ex. 1003

¶¶ 54–55). As Petitioner explains, "[t]he RACH parameters included in a configuration message can include indications of 'one or more Physical RACH (PRACH) occasions available for transmission' of a random-access preamble message and information for determining the power level of the transmission." *Id.* (citing Ex. 1005 ¶¶ 153, 154). Cirik explains this "contention-free random access procedure . . . may be initiated for beam failure recovery." Ex. 1005 ¶ 162; *see also* Pet. 20–23 (discussing in detail in the context of limitation [1b] the RA procedures for beam failure recovery in Cirik).

We note that nothing in the claim language requires that the first configuration parameters must be received in a single message. Indeed, the claim language explicitly permits "one or more messages." Thus, there is nothing improper about the Petitioner identifying multiple messages as including the "first configuration parameters for beam failure recovery" (i.e., Cirik's configuration parameters that indicate the maximum number of beam failures and Cirik's configuration parameters for random access processes used in connection with beam failure recovery), as Patent Owner suggests. Prelim. Resp. 4 ("But at no point does Petitioner assert that the configuration message for first random access parameters is included within the 'one or more configuration parameters [that] indicate the maximum number of beam failures' that it identifies for the 'first configuration parameters' limitation."). Accordingly, for purposes of institution, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

d) [1a.iii] "second configuration parameters for listen-before-talk (LBT) failure recovery; and"

Petitioner asserts Cirik renders obvious this limitation. Pet. 17–18 (citing Ex. 1003 ¶ 57; Ex. 1005 ¶¶ 151–174, 207–210, 215–219, 245–246,

Figs. 17, 18, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

e) [1a.iv] "second random access parameters;"

Petitioner asserts Cirik renders obvious this limitation. Pet. 19 (citing Ex. 1003 ¶¶ 58, 59; Ex. 1005 ¶¶ 151–174, 207–210, 264–266, Figs. 17, 19, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

f) [1b] "initiating, based on the first configuration parameters and in response to detecting a beam failure on a primary cell, a first random access process on a first bandwidth part (BWP) of the primary cell for beam failure recovery based on the first random access parameters;"

Petitioner asserts Cirik renders obvious this limitation. Pet. 20–23 (citing Ex. 1003 ¶¶ 60–63; Ex. 1005 ¶¶ 112, 196, 150–163, 164-174, 209, 212, 270, 307, 308, 321, 333, Figs. 13A–C, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

g) [1c] "triggering, based on the second configuration parameters, consistent LBT failure for the primary cell;"

Petitioner asserts Cirik renders obvious this limitation. Pet. 23–25 (citing Ex. 1003 ¶¶ 64, 65; Ex. 1005 ¶¶ 207–209, 215–217, 231–233, 307, 310–315, Figs. 17, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's

arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

h) *[1d] "stopping the first random access process, for the beam failure recovery, based on the triggering the consistent LBT failure;"*

Petitioner asserts Cirik renders obvious this limitation. Pet. 25–27 (citing Ex. 1003 ¶¶ 66, 67; Ex. 1005 ¶¶ 151–174, 308–310, 312–314, 318, Figs. 13A–C, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

i) *[1e] "switching from the first BWP of the primary cell to a second BWP of the primary cell as an active BWP of the primary cell; and"*

Petitioner asserts Cirik renders obvious this limitation. Pet. 27–31 (citing Ex. 1003 ¶¶ 68–72; Ex. 1005 ¶¶ 106–108, 112, 155, 156, 210, 211, 214, Figs. 9, 18, 21, 22). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

j) *[1f] "initiating a second random access process on the second BWP of the primary cell for consistent LBT failure recovery and based on the second random access parameters."*

Petitioner asserts Cirik renders obvious this limitation. Pet. 31–34 (citing Ex. 1003 ¶¶ 73–76; Ex. 1005 ¶¶ 106, 107, 150–174, 209, 253, 264, 266, 309, 312, 317, 318, Figs. 13A–13C, 20, 21). At this stage of the proceeding, Patent Owner does not dispute that Cirik discloses this limitation. Thus, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Cirik discloses this limitation.

k) Summary as to Claim 1

We find that Petitioner has shown sufficiently that Cirik accounts for all the limitations of claim 1. Patent Owner does not raise any secondary considerations of nonobviousness at this stage of the proceeding. Thus, we conclude for the reasons given that Petitioner has shown a reasonable likelihood of prevailing in showing that claim 1 would have been obvious over Cirik.

2. Claims 2–19

Patent Owner does not raise any other separate arguments regarding claims 2–19 other than those we have considered above with respect to claim 1. *See* Prelim. Resp. 3–5. On the current record, we do not find Patent Owner's arguments persuasive, as explained above. We have reviewed Petitioner's contentions regarding claims 2–19 (Pet. 34–63), and determine that Petitioner shows a reasonable likelihood of prevailing with respect to the obviousness of claims 2–19 over Cirik.

E. Alleged Ground of Unpatentability Over Cirik and Wu

Petitioner contends that claims 1–19 of the '128 patent are unpatentable under 35 U.S.C. § 103 as obvious over Cirik and Wu. Pet. 65–69. Patent Owner argues that this ground fails for the same reason addressed above with respect to obviousness over Cirik alone. *See* Prelim. Resp. 5. For the reasons explained above, we did not find those arguments persuasive. We have reviewed Petitioner's evidence and arguments regarding the combination of Cirik and Wu, and find that Petitioner has shown a reasonable likelihood of prevailing with respect to the obviousness of claims 1–19 over Cirik and Wu.

F. Alleged Ground of Unpatentability Over Cirik and InterDigital

Petitioner contends that claims 1–19 of the '128 patent are unpatentable under 35 U.S.C. § 103 as obvious over Cirik and InterDigital. Pet. 63–69. Patent Owner argues that this ground fails for the same reason addressed above with respect to obviousness over Cirik alone. *See* Prelim. Resp. 5. For the reasons explained above, we did not find those arguments persuasive. We have reviewed Petitioner's evidence and arguments regarding the combination of Cirik and Interdigital, and find that Petitioner has shown a reasonable likelihood of prevailing with respect to the obviousness of claims 1–19 over Cirik and Interdigital.

G. Alleged Ground of Unpatentability Over Wu and InterDigital and Unpatentability Over Wu, InterDigital, and Cirik

Petitioner contends that claims 1, 10, and 16–19 of the '128 patent are unpatentable under 35 U.S.C. § 103 as obvious over Wu and InterDigital. Pet. 70–85. Petitioner also contends that claims 2–9 and 11–15 of the '128 patent are unpatentable under 35 U.S.C. § 103 as obvious over Wu, InterDigital, and Cirik. Pet. 85–89. As we preliminarily conclude that Petitioner demonstrates a reasonable likelihood that it will prevail on its challenge to claims 1–19 based on obviousness in view of Cirik, Cirik and Wu, and Cirik and InterDigital, we institute review on all challenged claims on all grounds set forth in the Petition, including Petitioner's obviousness challenge to claims 1, 10, and 16–19 based on Wu and InterDigital, and the obviousness challenge to claims 2–9 and 11–15 based on Wu, InterDigital, and Cirik. *See* 37 C.F.R. § 42.108(a); *SAS*, 584 U.S. at 362–63; *PGS*, 891 F.3d at 1360.

IV. CONCLUSION

After considering the arguments presented in the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '128 patent is unpatentable. Thus, we institute an *inter partes* review of all challenged claims (i.e., claims 1–19) on all the grounds raised in the Petition.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–19 of the '128 patent is hereby ordered on all grounds of unpatentability set forth in the Petition; and

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 commencing on the entry date of this decision.

FOR PETITIONER:

W. Karl Renner
Thomas Rozylowicz
Nicholas Stephens
Joseph Bauer
FISH & RICHARDSON P.C.
axf-ptab@fr.com
tar@fr.com
nstephens@fr.com
jbauer@fr.com

FOR PATENT OWNER:

Vincent Rubino
Peter Lambrianakos
Enrique Iturralde
Julian Pymento
Jacob Ostling
FABRICANT LLP
PTAB@fabricantllp.com
vrubino@fabricantllp.com
plambrianakos@fabricantllp.com
eiturralde@fabricantllp.com
jpymento@fabricantllp.com
jostling@fabricantllp.com