No. _____

IN THE

Supreme Court of the United States

WI-LAN, INC.; WI-LAN LABS, INC.;
AND WI-LAN USA, INC.,

Petitioners,

v.

DREW HIRSHFELD, ACTING UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether, for purposes of the Appointments Clause, U.S. Const. Art. II, § 2, Cl. 2, administrative patent judges of the U.S. Patent and Trademark Office are principal officers who must be appointed by the President with the Senate's advice and consent, or "inferior Officers" whose appointment Congress has permissibly vested in a department head.

2. Whether, if administrative patent judges are principal officers, the court of appeals properly cured any Appointments Clause defect in the current statutory scheme prospectively by severing the application of 5 U.S.C. § 7513(a) to those judges.

PARTIES TO THE PROCEEDINGS

Wi-LAN, Inc., Wi-LAN Labs, Inc., and Wi-LAN USA, Inc. were the patent owners in the proceeding before the Patent Trial and Appeal Board and appellants in the court of appeals.

LG Electronics, Inc., LG Electronics U.S.A., Inc., and LG Electronics Mobilecomm U.S.A., Inc. were the petitioners in the proceeding before the Patent Trial and Appeal Board and the appellees in the court of appeals but withdrew from the appeal due to settlement before filing a brief.

After LG Electronics, Inc., LG Electronics U.S.A., Inc., and LG Electronics Mobilecomm U.S.A., Inc. informed the court of appeals that they would not participate in the appeal, the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office ("Director") intervened to defend the agency ruling in the appeal. The court of appeals subsequently amended the caption to list Andrei Iancu, then Director, as intervenor. Mr. Iancu subsequently resigned his position.

Due to Mr. Iancu's resignation, Drew Hirshfeld is the current Acting Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office.

CORPORATE DISCLOSURE STATEMENT

Pursuant to this Court's Rule 29.6, petitioners Wi-LAN, Inc., Wi-LAN Labs, Inc., and Wi-LAN USA, Inc., identify the following parent corporations or publicly held companies that own 10% or more of petitioners' stock: Quarterhill Inc.

RELATED PROCEEDINGS

There are no proceedings that are directly related to this case within the meaning of Rule 14.1(b)(iii) and that remain pending at this time.

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PETITION FOR A WRIT OF CERTIORARI

Petitioners Wi-LAN, Inc., Wi-LAN Labs, Inc., and Wi-LAN USA, Inc. (collectively, "Wi-LAN") respectfully request a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit. On October 13, 2020, this Court granted the petitions for certiorari in Nos. 19-1434, 19-1452, and 19-1458, all limited to Questions 1 and 2 (identical to the questions presented by this petition) as set forth in the July 22, 2020 Memorandum for the United States. As explained further below, Wi-LAN respectfully submits that this petition should be held pending the disposition of those writs of certiorari (Nos. 19-1434, 19-1452, and 19-1458) that have been granted to review the Federal Circuit's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019), and then resolved accordingly as dictated by the outcome of those cases.

OPINIONS BELOW

On October 9, 2020, the United States Court of Appeals for the Federal Circuit issued its judgment under Fed. Cir. R. 36, affirming without opinion the final written decision of the Patent Trial and Appeal Board ("Board"). The Rule 36 judgment is reprinted in the Appendix to the Petition ("App.") at App. 1a-2a and was reported at *Wi-LAN Inc. v. Iancu*, 825 F. App'x 922 (Fed. Cir. Oct. 9, 2020).

The final written decision of the Board is reprinted at App. 3a-63a and is available at *LG Elecs., Inc. v. Wi-LAN Inc.*, IPR2018-00705, 2019 WL 3294987 (P.T.A.B. July 22, 2019).

JURISDICTION

The judgment of the Federal Circuit was entered on October 9, 2020. App. 2a. No petition for rehearing was filed. On March 19, 2020, this Court extended the time within which to file any petition for a writ of certiorari due on or after that date to 150 days from the date of the lower court judgment, order denying discretionary review, or order denying a timely petition for rehearing. Thus, the deadline for filing this petition for a writ of certiorari is March 8, 2021. Petitioner invokes the jurisdiction of this Court under 28 U.S.C. § 1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

The Appointments Clause, U.S. Const. Art. II, § 2, Cl. 2, provides:

> [The President] shall nominate, and by and with the Advice and Consent of the Senate, shall appoint Ambassadors, other public Ministers and Consuls, Judges of the Supreme Court, and all other Officers of the United States, whose Appointments are not herein otherwise provided for, and which shall be established by Law: but the Congress may by Law vest the Appointment of such inferior Officers, as they think proper, in the President alone, in the Courts of Law, or in the Heads of Departments.

STATEMENT OF THE CASE

If this Court affirms the Federal Circuit's holding in *Arthrex* that administrative patent judges are principal officers but concludes that the Federal Circuit's remedy of severing the application of 5 U.S.C. § 7513(a) to those judges is improper or does not cure the Appointments Clause defect, then the Board's final written decision at issue here, finding that certain claims of a patent owned by Wi-LAN are unpatentable, should be vacated. Because this Court's disposition of the granted petitions in the *Arthrex* cases will directly address the questions presented here, Wi-LAN respectfully submits that the instant petition should be held pending this Court's disposition of the *Arthrex* cases and then resolved accordingly.

I. The *Arthrex* Decision and this Court's Certiorari Grant

1. The Board consists of Administrative Patent Judges ("APJs") that possess significant decision-making authority to determine the validity of patents challenged before the Board. APJs are appointed by the Secretary of Commerce in consultation with the Director of the United States Patent and Trademark Office. They are not appointed by the President with the advice and consent of the Senate. In *Arthrex*, the Federal Circuit held that APJs are principal officers appointed in violation of the Appointments Clause.

To remedy the constitutional defect it identified, the Federal Circuit, after evaluating various alternatives, concluded that "the narrowest possible modification to the scheme Congress created" was to "sever the application of Title 5's removal restrictions to APJs." 941 F.3d at 1337. Because "the final written

decision on appeal issued while there was an Appointments Clause violation," the Federal Circuit vacated and remanded the Board's decision. *Id.* at 1325.

On October 13, 2020, this Court granted the petitions for certiorari in Nos. 19-1434, 19-1452, and 19-1458, all limited to Questions 1 and 2 as set forth in the July 22, 2020 Memorandum for the United States. The specific questions granted are identical to those presented in this petition.

As the number of remands based on *Arthrex* mounted, the Board issued a general order staying all Federal Circuit remands based on *Arthrex* pending the expected filing of petitions for certiorari before this Court. General Order in Cases Remanded Under *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019), at 1-2 (P.T.A.B. May 1, 2020). The United States and the Director also filed petitions for certiorari regarding the numerous Federal Circuit remands based on *Arthrex*, which are presumably being held by this Court. *E.g.*, Petition for Certiorari, No. 20-74, *United States v. Image Proc. Techs. LLC* (July 23, 2020).

2. Briefing and oral argument have now been completed in *Arthrex* and the consolidated cases. This Court will soon resolve whether the APJs are principal officers and therefore have been unconstitutionally appointed. If this Court affirms that ruling of the Federal Circuit on the first question, this Court will then need to answer whether the Federal Circuit's severance remedy was proper and if not, address the appropriate remedy or remand for the Federal Circuit to address it in view of this Court's guidance. Because

the questions presented are identical, resolution of this petition hinges on resolution of the *Arthrex* case.

II. The Proceedings in this Matter

1. U.S. Patent No. 9,226,320 ("the '320 Patent"), entitled "Pre-Allocated Random Access Identifiers," is directed to pre-allocating codes to wireless devices for requesting resources from a base station over a random access channel. Wi-LAN filed a patent infringement action in federal district court against LG Electronics, Inc., LG Electronics U.S.A., Inc., and LG Electronics Mobilecomm U.S.A., Inc.'s (collectively, "LG") for infringement of the '320 Patent as well as three other patents. *Wi-LAN Inc. v. LG Elecs., Inc.*, No. 3:17-cv-00358 (S.D. Cal. July 10, 2018).

2. LG responded to Wi-LAN's infringement suit by seeking *inter partes* review ("IPR") of the '320 Patent, as well as other asserted patents, under the Leahy-Smith America Invents Act ("AIA"), 35 U.S.C. § 311, arguing various claims of the '320 Patent would have been obvious over a combination of prior art references. After LG filed its petitions for IPR, it filed a motion to stay the district court litigation, which the district court granted. *Wi-LAN, Inc. v. LG Elecs., Inc.*, No. 3:17-cv-00358 (S.D. Cal. May 22, 2018). The district court later lifted the stay and granted a motion to dismiss for lack of subject matter jurisdiction. *Wi-LAN, Inc. v. LG Elecs., Inc.*, No. 3:17-cv-00358 (S.D. Cal. July 10, 2018). Wi-LAN then filed a second infringement suit against LG asserting the '320 Patent as well as three other patents. *Wi-LAN Inc. v. LG Elecs., Inc.*, No. 3:18-cv-01577 (S.D. Cal. Jan. 9, 2020). The Board denied institution on four of LG's six IPR petitions. *Wi-LAN Inc. v. LG Elecs., Inc.*, No. 3:18-

cv-01577, 2018 WL 9516050, at *1 (S.D. Cal. Dec. 4, 2018). LG again sought a stay of the district court proceeding, but the district court denied the motion. *Id.* at *5. The parties subsequently settled their disputes and dismissed the district court case. *Wi-LAN Inc. v. LG Elecs., Inc.*, No. 3:18-cv-01577 (S.D. Cal. Jan. 9, 2020).

3. The Board issued a final written decision holding that the challenged claims of the '320 Patent were unpatentable. App. 3a-63a. Wi-LAN appealed that ruling. The Federal Circuit affirmed under Rule 36 of its local rules, without a written decision. App. 2a.

REASONS FOR GRANTING THE WRIT

If this Court affirms the Federal Circuit's determination that the appointment of APJs is unconstitutional, then the ruling rescinding Wi-LAN's previously granted property right in its '320 Patent by holding certain claims invalid would have been made by unconstitutionally-appointed APJs. If this Court declines to affirm the remedy selected by the Federal Circuit and selects a different remedy, or remands for selection of a different remedy, Wi-LAN should be entitled to that relief. Given the Court's grant of certiorari to review both of these issues, this petition should be held pending the resolution of the questions presented in *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 19-1458; *Smith & Nephew, Inc. v. Arthrex, Inc.*, No. 19-1452; and *United States v. Arthrex, Inc.*, No. 19-1434, and then disposed of accordingly.

1. The Federal Circuit correctly concluded that the appointment of APJs violates the Appointments Clause. Under *Edmond v. United* States, 520 U.S. 651

(1997), "'inferior officers' are officers whose work is directed and supervised at some level by others who were appointed by Presidential nomination with the advice and consent of the Senate." *Id.* at 663. But under the AIA, APJ decisions cannot be reviewed by the Director, or any other officer, and appeals lie only to the Federal Circuit. 35 U.S.C. § 319 (citing 35 U.S.C. § 141). APJs are principal officers under *Edmond*.

Additionally, APJs are protected from removal by strict standards. *See* Br. for Arthrex, Inc. at 19-39, *Arthrex, Inc.*, Nos. 19-1434, 19-1452, 19-1458 (Dec. 23, 2020). The Federal Circuit correctly determined that removal authority weighed in favor of viewing APJs as principal officers because "both the Secretary of Commerce and the Director [of the Patent and Trademark Office] lack unfettered removal authority." *Arthrex*, 941 F.3d at 1332. Instead of being removable "without cause," "APJs may be removed 'only for such cause as will promote the efficiency of the service.'" *Id.* at 1333 (citing 5 U.S.C. § 7513(a)). Moreover, the Director's "authority to assign certain APJs to *certain* panels" is insufficient because that "is not the same as the authority to remove an APJ *from judicial service* without cause." *Id.* at 1332.

The government's response to these points is that the Director may "promulgate regulations" and "issue binding policy directives," and "has additional prerogatives regarding the conduct of individual proceedings." Br. for the U.S. at 14-15, *Arthrex Inc.*, Nos. 19-1434, 19-1452, 19-1458 (Nov. 25, 2020). But the government's response ignores that "Congress expressly divided the delegation of rulemaking and adjudicatory powers between the Director and the Board." Br. for Arthrex, Inc. at 40, *Arthrex, Inc.*, Nos.

19-1434, 19-1452, 19-1458. The structure of the AIA "prohibits the Director from using his general rulemaking or policymaking authority to direct the Board how to decide specific cases." *Id.*

2. This Court should affirm the Federal Circuit's determination that the appointment of APJs is unconstitutional. If it does so, this Court will also need to consider the adequacy of the Federal Circuit's purported remedy—specifically, severance of APJs' tenure protections.

It is well-established that administrative adjudications must afford parties a "fair trial in a fair tribunal." *Withrow v. Larkin*, 421 U.S. 35, 46 (1975) (citation omitted). Decision makers that are "neutral and detached" are a central requirement of that objective. *Ward v. Village of Monroeville*, 409 U.S. 57, 62 (1972).

Congress clearly intended APJs to have tenure protections which are necessary to ensure fair tribunals for addressing patent validity. Br. for Arthrex, Inc. at 47-56, *Arthrex, Inc.*, Nos. 19-1434, 19-1452, 19-1458. Eliminating those protections promotes neither congressional intent nor the public perception of fair tribunals.

Without tenure protections, the independence and impartiality of APJs may well be undermined, as APJs may succumb to political pressure or other incentives. Accordingly, should this Court confirm the Appointments Clause violation, the Federal Circuit's proposed fix should be vacated, and the best path forward is to have Congress address the remedy.

3. Wi-LAN was and remains entitled to have the validity of its patent, a private property interest,

adjudicated by a constitutionally-sound panel. At the very least, if this Court affirms the Federal Circuit's constitutionality determination and declines to affirm the remedy selected by the Federal Circuit, this case, like other currently pending petitions, should be remanded back to the Federal Circuit for appropriate treatment. *See Harper v. Va. Dep't of Taxation*, 509 U.S. 86, 97 (1993) ("When this Court applies a rule of federal law to the parties before it, that rule is the controlling interpretation of federal law and must be given full retroactive effect in all cases still open on direct review[.]").

4. No principle of forfeiture or waiver precludes holding this petition pending this Court's disposition of the *Arthrex* cases and then disposing of it accordingly. Indeed, "the mere failure to interpose [a constitutional] defense prior to the announcement of a decision which might support it cannot prevent a litigant from later invoking such a ground." *Curtis Publ'g Co. v. Butts*, 388 U.S. 130, 142-43 (1967). This is especially true where, as here, the court below has previously rejected the defense at issue. Before *Arthrex*, the Federal Circuit had rejected the very same Appointments Clause challenge it ultimately accepted in *Arthrex*. *See Trading Techs. Int'l, Inc. v. IBG LLC*, 771 F. App'x 493 (Fed. Cir. 2019); *Bedgear, LLC v. Fredman Bros. Furniture Co., Inc.*, 779 F. App'x 748 (Fed. Cir. 2019), *reh'g granted, judgment vacated*, 803 F. App'x 407 (Fed. Cir. 2020).

Appointments Clause challenges are particularly appropriate for excusing forfeiture. *See, e.g.*, *Freytag v. Comm'r*, 501 U.S. 868, 879 (1991) (reviewing Appointments Clause challenge over assertion of waiver, noting "the strong interest of the federal

judiciary in maintaining the constitutional plan of separation of powers" (citation omitted)); *see also PHH Corp. v. Consumer Fin. Prot. Bureau*, 839 F.3d 1 (D.C. Cir. 2016), *rev'd en banc*, 881 F.3d 75 (D.C. Cir. 2018) (Kavanaugh, J.) (permitting an Appointments Clause challenge despite claims of waiver). Even in *Arthrex*, the Federal Circuit reached the Appointments Clause issue despite arguments by appellees and the government that Arthrex forfeited its Appointments Clause challenge by not raising the issue before the Board. 941 F.3d at 1327. Because it determined that the Appointments Clause issue was "an issue of exceptional importance," the Federal Circuit concluded it was appropriate to "decide the issue over a challenge of waiver." *Id.*

This Court has long practiced a flexible approach favoring enforcement of constitutional limits over strict adherence to forfeiture rules. As this Court observed in *Freytag*, "'in *Lamar v. United States*, 241 U.S. 103, 117-118 [(1916), this Court heard] the claim that an intercircuit assignment . . . usurped the presidential appointing power under Art. II, § 2, . . . despite the fact that it had not been raised in the District Court or in the Court of Appeals or even in this Court until the filing of a supplemental brief upon a second request for review." *Freytag*, 501 U.S. at 879 (quoting *Glidden Co. v. Zdanok*, 370 U.S. 530, 536 (1962)).

Additionally, this Court has traditionally recognized that intervening precedent creates an exception to waiver. In *Hormel v. Helvering*, this Court held that an exception to the rule of waiver applies where "there have been judicial interpretations of existing law after decision below and pending

appeal—interpretations which if applied might have materially altered the result." 312 U.S. 552, 558-59 (1941). Plainly that exception should apply here, where the *Arthrex* decision was issued during the pendency of Wi-LAN's appeal and especially where this Court's grant of certiorari on the question of appropriate remedy could fundamentally alter the effect of that constitutional violation on the proceedings below.

Even the Federal Circuit has granted such exceptions in some cases. For example, after this Court's *statutory* ruling in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018), the Federal Circuit excused parties' failure to challenge the Board's institution procedure on less than all claims or grounds in the opening brief on appeal, recognizing that "*SAS* represented a significant change in law," and that "'any attempt to argue against partial institution [prior to *SAS*] would have been futile under the Board's regulations and our precedent.'" *Biodelivery Scis. Int'l, Inc. v. Aquestive Therapeutics, Inc.*, 898 F.3d 1205, 1209 (Fed. Cir. 2018) (quoting *Polaris Indus. Inc. v. Arctic Cat, Inc.*, 724 F. App'x 948, 950 (Fed. Cir. 2018)). The Federal Circuit thus held that despite a party's failure to raise the partial institution issue even during briefing in the appeal, "[i]t is clear that waiver does not apply." *Id.*; *see also Polaris Indus.*, 724 F. App'x at 949 ("Precedent holds that a party does not waive an argument that arises from a significant change in law during the pendency of an appeal.").

Any assertion of the *constitutional* violations covered in the questions presented would have been effectively futile. Had Wi-LAN raised the *Arthrex* issue in its opening brief on appeal, the Federal Circuit

would have simply vacated the Board's decision and remanded to the Board for another hearing. But the only difference between that hearing and Wi-LAN's original hearing would have been a different panel of APJs serving under a remedial regime invented by the Federal Circuit that, under Wi-LAN's view, does not solve the constitutional problem. And jettisoning removal protections only undermines the impartiality and independence that Congress intended APJs, who adjudicate the validity of valuable intellectual property rights, to have.

In Wi-LAN's view, a rehearing by a different set of still-constitutionally infirm—and now less independent—APJs would not have provided a remedy to the constitutional violations, changed the outcome, nor provided any benefit to Wi-LAN. Because Wi-LAN like the petitioner in *Arthrex*, believes that the Federal Circuit's remedy was not an acceptable solution to the Appointments Clause violation, seeking a remand from the Federal Circuit would have simply added delay and cost without improving the situation.

What's more, even if Wi-LAN had sought and obtained a remand from the Federal Circuit based on *Arthrex*, Wi-LAN would be in exactly the same position as it is now—with a pending petition for certiorari awaiting the outcome of this Court's ruling in the *Arthrex* cases. Why? Because the government petitioned for review of the Federal Circuit *Arthrex* remands, and those cases are presumably being held pending the resolution of *Arthrex*. *E.g.*, Petition for Certiorari, No. 20-74, *United States v. Image Proc. Techs. LLC* (July 23, 2020).

What Wi-LAN seeks is simple: To have the validity of its patent adjudicated by a properly

constituted panel should this Court confirm there is an Appointments Clause violation but conclude that the Federal Circuit erred in its choice of remedy.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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March 8, 2021

APPENDIX

APPENDIX A

NOTE: This disposition is nonprecedential.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

WI-LAN INC., WI-LAN LABS, INC., WI-LAN USA, INC.,

Appellants

v.

ANDREI IANCU, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Intervenor

2019-2284

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2018-00705.

JUDGMENT

DOUGLAS R. WILSON, Armond Wilson LLP, Austin, TX, argued for appellants. Also represented by MICHELLE ARMOND, Newport Beach, CA.

BRIAN RACILLA, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for intervenor. Also represented by THOMAS W. KRAUSE, FARHEENA YASMEEN RASHEED, MAI-TRANG DUC DANG.

THIS CAUSE having been heard and considered, it is

ORDERED and ADJUDGED:

PER CURIAM (PROST, *Chief Judge*, WALLACH and STOLL, *Circuit Judges*).

AFFIRMED. See Fed. Cir. R. 36.

ENTERED BY ORDER OF THE COURT

October 9, 2020	/s/ Peter R. Marksteiner
Date	Peter R. Marsteiner
	Clerk of the Court

APPENDIX B

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., LG ELECTRONICS MOBILECOMM U.S.A., INC.,

Petitioner,

v.

WI-LAN INC., WI-LAN USA, INC., WI-LAN LABS, INC.,

Patent Owner.

Case IPR2018-00705

Patent 9,226,320 B1

Before JONI Y. CHANG, ANNETTE R. REIMERS, and KAMRAN JIVANI, *Administrative Patent Judges.*

CHANG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

LG Electronics, Inc., LG Electronics U.S.A., Inc., and LG Electronics Mobilecomm U.S.A., Inc. (collectively, "Petitioner") filed a Petition requesting an inter partes review of claims 1, 3, 4, 8–10, 12, 15–17, 20, 21, 25, 27, and 30 ("the challenged claims") of U.S. Patent No. 9,226,320 B1 (Ex. 1001, "the '320 patent"). Paper 2 ("Pet."). Wi-LAN Inc., Wi-LAN USA, Inc., and Wi-LAN Labs, Inc. (collectively "Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp."). We determined that Petitioner had established a reasonable likelihood that it would prevail with respect to at least one claim, and we instituted this inter partes review as to all of the challenged claims of the '320 patent and all the grounds asserted by Petitioner. Paper 11 ("Dec.").

After institution, Patent Owner filed a Response (Paper 20, "PO Resp."); Petitioner filed a Reply (Paper 23); and Patent Owner filed a Sur-reply (Paper 24). An oral hearing was held on May 6, 2019, and the transcript of the oral hearing has been entered into the record as Paper 35 ("Tr."). In addition, the parties have filed a copy of their district court claim construction briefs (Exs. 1010, 2003, 2004, 2009–2012), as well as the District Court Claim Construction Order (Ex. 2013).

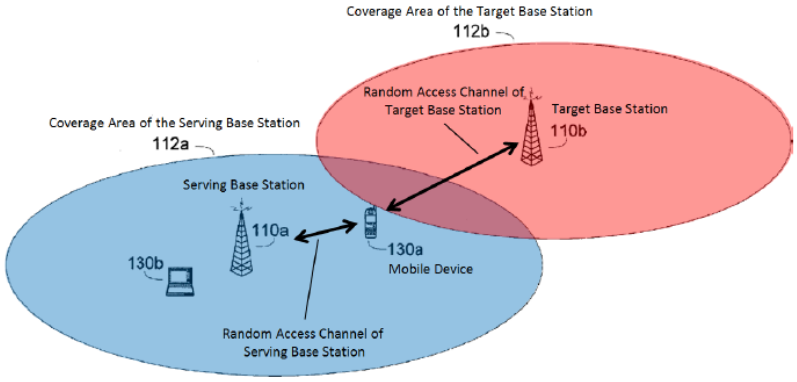
For the reasons provided below, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 3, 4, 8–10, 12, 15–17, 20, 21, 25, 27, and 30 of the '320 patent are unpatentable.

A. Related Matters

The parties indicate that the '320 patent is involved in *Wi-LAN, Inc. v. LG Electronics, Inc.*, Case No. 3:17-cv-00358 (S.D. Cal). Pet. 1; Paper 4, 2. Petitioner also filed another petition requesting an inter partes review of the '320 patent, which we denied. Pet. 1; Case IPR2018-00704, Papers 2, 14.

B. The '320 Patent

The '320 patent, titled "Pre-Allocated Random Access Identifiers," describes "[s]ystems and methods of pre-allocating identifiers to wireless devices for use in requesting resources over a random access channel." Ex. 1001, Abstract. Figure 1 of the '320 patent is reproduced below with Patent Owner's annotations and color highlighting (PO Resp. 2).



As shown in annotated Figure 1 of the '320 patent above, each base station has a coverage area and a random access channel. *Id.* at 3:18–22, 4:60–62. The coverage area of serving base station 110a is highlighted in blue, and the coverage area of target base station 110b is highlighted in red. Serving base station 110a is the base station that is currently

serving mobile device 130a. *Id.* at 4:56–60. In the situation where mobile device 130a transitions from the coverage area of serving base station 110a to the coverage area of a target base station 110b, the communication link is handed over from serving base station 110a to target base station 110b. *Id.* at 20:6–14. In a handover situation, the serving base station or the target base station allocates a code to the subscriber station for use during the handover. *Id.* at 20:11–14.

C. Illustrative Claims

Of the challenged claims, claims 1, 12, 16, and 27 are independent. Claims 3, 4, and 8–10 depend directly from claim 1; claim 15 depends directly from claim 12; claims 17, 20, 21, and 25 depend directly or indirectly from claim 16; and claim 30 depends directly from claim 27. Claims 1 and 12 are illustrative:

> 1. A method of operating a mobile station, comprising:
>
> receiving, from a serving base station, an indication of a first reserved set of access identifiers usable for non-contention access over a first random access channel in a coverage area of the serving base station;
>
> obtaining, during a handover of the mobile station from the serving base station to a target base station, an indication of a non-contention reserved access identifier identifying the mobile station in a coverage area of the target base station;
>
> transmitting the non-contention reserved access identifier to the target base station

over a second random access channel in the coverage area of the target base station;

receiving, from the target base station, a feedback message comprising a timing adjustment; and

adjusting at least one operating parameter of a transmission from the mobile station to the target base station based at least in part on the feedback message.

Ex. 1001, 21:8–25 (emphases added).

12. A method of operating a mobile station, comprising:

receiving a message providing the mobile station with an indication of *a non-contention reserved access identifier* available for use by the mobile station in a coverage area of a target base station, the non-contention reserved access identifier belonging to a set of access identifiers *reserved for non-contention access to the target base station*;

receiving information about a shared random access channel available in the coverage area of the target base station;

transmitting the non-contention reserved access identifier to the target base station over the shared random access channel for handover;

receiving from the target base station a feedback message comprising a timing adjustment; and

adjusting uplink transmission timing of the mobile station using the timing adjustment.

Id. at 22:1−18 (emphases added).

D. Prior Art Relied Upon

Petitioner relies upon the prior art references listed below (Pet. 8).

Song US 2005/0117539 A1 June 2, 2005 (Ex. 1005)

Cleveland US 2007/0066226 A1 Mar. 22, 2007 (Ex. 1007)

802.16 IEEE Standard for Local and Metropolitan Area Networks, Part 16: Air Interface for Fixed Broadband Wireless Access Systems (Institute of Electrical and Electronics Engineers, Inc., Oct. 2004)

(Ex. 1008, "WiMAX").

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 8):

Challenged Claims	Basis	References
1, 3, 4, 8−10, 12, and 15	§ 103(a)[1]	Song and WiMAX

[1] Because the claims at issue appear to have an effective filing date prior to March 16, 2013, the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") amendments to 35 U.S.C. § 103, we apply the pre-AIA version of 35 U.S.C. § 103 in this Decision.

16, 17, 20, 21, 25, 27, and 30	§ 103(a)	Song, WiMAX, and Cleveland

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining 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)). Petitioner's declarant, Robert Akl, Ph.D., asserts that a person of ordinary skill in the art would have had "a bachelor's degree in electrical engineering, computer engineering, computer science or similar field, and two to three years of experience in wireless telecommunications, or equivalent." Ex. 1003 ¶¶ 16–19; Pet. 4–5. Patent Owner does not dispute this assertion. *See generally* PO Resp. 9. Patent Owner's declarant, Gary Lomp, Ph.D., proffers a similar assessment. Ex. 2006 ¶¶ 14–20. We note that Petitioner's assessment appears consistent with the level of ordinary skill in the art at the time of the invention as reflected in the prior art in the instant proceeding. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We agree with Dr. Akl's assessment, and apply that assessment in our analysis in this Decision.

B. Claim Construction

We apply the broadest reasonable interpretation ("BRI") standard in this proceeding because the Petition was filed on October 11, 2017, prior to the effective date of the rule change that replaced the BRI standard. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (final rule) ("This rule is effective on November 13, 2018 and applies to all IPR, PGR and CBM petitions filed on or after the effective date."). Under the BRI standard, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2018). The terms are generally given their ordinary and customary meaning, as would have been understood by one of ordinary skill in the art in the context of the Specification. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). For this Final Written Decision, we find it necessary to construe only the claim term identified below. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.,* 200 F.3d 795, 803 (Fed. Cir. 1999)) (noting that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

"a non-contention reserved access identifier"

The term "non-contention reserved access identifier" appears in each of the independent challenged claims. For example, claim 1 recites:

> obtaining, *during a handover* of the mobile station from the serving base station to a target base station, an indication of *a non-contention reserved access identifier* identifying the mobile station in a coverage area of the target base station.

Ex. 1001, 21:13–17 (emphases added). Claim 16 recites a similar limitation. *Id.* at 22:29–38. Claim 12 recites:

> receiving a message providing the mobile station with an indication of *a non-contention reserved access identifier* available for use by the mobile station in a coverage area of a target base station, the non-contention reserved access identifier belonging to a set of access identifiers *reserved for non-contention access to the target base station*.

Id. at 22:2–8 (emphases added). Claim 27 recites a similar limitation. *Id.* at 23:26–24:4.

In its Petition, Petitioner argues that the term "non-contention" should be interpreted to include "reduces the probability of collision or avoids collision." Pet. 5–8. As support, Petitioner notes that the Specification of the '320 patent discloses that "[d]uring a handover condition, the target base station allocates a non-contention initial ranging opportunity using a pre-allocated [Code Division Multiple Access] CDMA code." Ex. 1001, 20:15–17. The Specification also explains that "[t]he use of pre-allocated codes avoids collision probability associated with random subscriber selected access codes." *Id.* at 3:1–3.

Petitioner also points out that Patent Owner argued in a related district court litigation that "non-contention" does not require avoiding collisions, but instead should be understood more broadly to include reducing the probability of collisions. Pet. 7 (citing Ex. 1010, 24–28). This is consistent with the Specification, which states that the base station "reduces the probability of random access channel collisions . . . by pre-allocating one or more identifiers." Ex. 1001, Abstract, 1:41–46. For purposes of the Institution Decision, we adopted Petitioner's construction. Dec. 9. After institution, neither party disputes that construction for "non-contention" in this proceeding. PO Resp. 19; Reply 12–13.

Nevertheless, in its Response, Patent Owner asserts that the entire term "non-contention reserved access identifier" should be interpreted as a "reserved code that [1] is not randomly selected by the mobile station, [2] identifies a mobile station to a base station, and [3] reduces the probability of collision on a random access channel during handover." PO Resp. 10–19. For the reasons stated below, we adopt only the second and third parts, but not the first part, of Patent Owner's proposed claim construction.

In the instant proceeding, the parties do not dispute the second and third parts of Patent Owner's claim construction. Notably, the parties do not dispute that a "non-contention reserved access identifier" "identifies a mobile station to a base station." PO Resp. 16–17; Reply 6–13. This interpretation is consistent with the claims and Specification. As Patent Owner notes (PO Resp. 16–17), claim 1 recites "a non-contention reserved

access identifier identifying the mobile station in a coverage area of the target base station." Ex. 1001, 21:15–17. The Specification also discloses that a mobile station "can notify the base station 110a by transmitting an identifier on the random access channel," which the base station uses to identify the mobile station. *Id.* at 5:12–16.

The parties also do not dispute that a "non-contention reserved access identifier" "reduces the probability of collision on a random access channel during handover." PO Resp. 17–19; Ex. 2003, 28; Reply 12–13. As Patent Owner notes (PO Resp. 17–18), this interpretation is supported by the Specification disclosing that the base station "reduces the probability of random access channel collisions . . . by pre-allocating one or more identifiers" or "by pre-allocating one or more codes." Ex. 1001, Abstract, 1:42–46. Moreover, it is consistent with the District Court Claim Construction Order that rejected the contention that "the claimed identifier must completely avoid and eliminate any collisions." Ex. 2013, 37, 38.

The parties' main dispute centers on the first part of Patent Owner's claim construction—namely, whether the term "non-contention reserved access identifier" should be interpreted as a "reserved code that is not randomly selected by the mobile station." PO Resp. 10–16; Reply 6–12; Sur-reply 8–10. Notably, the claims do not recite the language a "code that is not randomly selected by the mobile station."

In the Institution Decision (Dec. 25, 26), we rejected Patent Owner's implicit construction that interprets the term "non-contention reserved access identifier" to exclude a randomly selected code

(Prelim. Resp. 17). We declined to import that negative limitation from the Specification into the claim. We noted that the Federal Circuit "has repeatedly cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015). Significantly, "it is the *claims*, not the written description, which define the scope of the patent right." *Id.* at 1346. This is consistent with the District Court Claim Construction Order that also rejected Patent Owner's attempt to improperly import the negative limitation from the Specification into the claims. Ex. 2013, 38–40.

In its Response and Sur-reply, Patent Owner advances several arguments. PO Resp. 10–16; Sur-reply 8–10. First, Patent Owner argues that the Specification discloses that "the reserved codes are *not to be randomly selected*," citing to Dr. Lomp's testimony (Ex. 2006 ¶ 42) for support. PO Resp. 10 (quoting Ex. 1001, 12:52–54) (emphasis added by Patent Owner).

However, the full sentence in which that language appears recites: "[t]he code assignment module 320 *can presume* . . . that the reserved codes are not to be randomly selected for a random access channel request . . . ." Ex. 1001, 12:50–56 (emphasis added). As the district court noted in its Claim Construction Order (Ex. 2013, 38), the Specification uses permissive language "can presume," and it does not state that the reserved codes must not be randomly selected. Ex. 1001, 12:50–56. Moreover, the Specification makes clear that the language relied upon by Patent Owner and Dr. Lomp is merely an

example or a preferred embodiment. *Id.* at 2:53–55, 2:63–64, 12:47 ("In some instances"), 12:56 ("In another embodiment"). Therefore, Patent Owner's argument that the Specification discloses "the reserved codes are *not to be randomly selected*" is misplaced. Consequently, we again decline to read the negative limitation "code that is not randomly selected" from a preferred embodiment into the claims. *See Williamson*, 792 F.3d at 1346–47.

Second, Patent Owner argues that the Specification distinguishes the claimed *pre-allocated codes* from codes that are *randomly selected* by the mobile station. PO Resp. 10–13; Tr. 21:16–22:3 (citing Ex. 1001, 14, 34–48). Patent Owner maintains that pre-allocated codes are the claimed "non-contention reserved access identifiers." PO Resp. 10–16; Sur-reply 2, 8. According to Patent Owner, the random access channel message generator of the subscriber station "selects the pre-allocated code having the desired semantic," and "[o]nly if the claimed pre-allocated code does not exist . . . , does 'the random access channel message generator 350 randomly select[] a code,'" citing Dr. Lomp's testimony (Ex. 2006 ¶ 45) for support. PO Resp. 12 (citing Ex. 1001, 14:48–52, 14:22–26); Tr. 21:16–22:3.

However, even assuming the cited "pre-allocated codes" discussions in the Specification are directed to the claimed "non-contention reserved access identifiers" and "handover," as Patent Owner maintains, Patent Owner's argument and Dr. Lomp's testimony are conclusory, not supported by the Specification as a whole.

As Patent Owner concedes, the Specification discloses that "[t]he random access channel message

generator 350 examines the codes stored in the storage device 340 to determine whether the subscriber station has been *pre-allocated one or more codes for [handover messages]*." PO Resp. 12 (quoting Ex. 1001, 14:17–21) (bracketed matter added by Patent Owner) (emphasis added). The subscriber station is not limited to receiving only one pre-allocated code for each usage type. Ex. 1001, 14:29–41. Indeed, the configuration module of the base station can "*pre-allocate multiple codes with the same usage type*" to the subscriber station. *Id.* at 8:27–29 (emphasis added).

Patent Owner and Dr. Lomp narrowly focus on a portion of the Specification, which discloses that "random access channel message generator 350 selects the pre-allocated code having the desired semantic," assuming improperly that at least one of the pre-allocated codes has the *desired semantic*. PO Resp. 12; Ex. 2006 ¶ 45 (quoting Ex. 1001, 14:42–44) (emphases added). Significantly, in the full paragraph in which that language appears, the Specification also discloses that "[i]f *no pre-allocated codes have the desired semantic*" and that "[i]f *there is no pre-allocated code with no semantic attached*, the random access channel message generator 350 *randomly selects a [pre-allocated] code* just as in the case where the subscriber station 300 has no pre-allocated codes." Ex. 1001, 14:42–52 (emphases added). The Specification makes clear that not every pre-allocated code is assigned a semantic or the desired semantic, and that the subscriber station randomly selects a pre-allocated code when the pre-allocated codes with the desired usage type have

semantics but none of the semantics is the desired semantic. Ex. 1001, 14:44–52.

In view of the Specification, we do not agree with Patent Owner's argument that the Specification distinguishes the claimed pre-allocated codes from randomly selected codes. PO Resp. 10–16. In addition, interpreting the claim term "non-contention reserved access identifier" to exclude randomly selected codes, as urged by Patent Owner, would improperly exclude a preferred embodiment. It is well established that "[a] claim construction that excludes the preferred embodiment 'is rarely, if ever, correct and would require highly persuasive evidentiary support.'" *Adams Respiratory Therapeutics, Inc. v. Perrigo Co.*, 616 F.3d 1283, 1290 (Fed. Cir. 2010) (citing *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1583–84 (Fed. Cir. 1996)).

Third, Patent Owner argues that the Specification distinguishes prior art codes that are randomly selected by the mobile station from the claimed pre-allocated codes, citing Dr. Lomp's testimony for support (Ex. 2006 ¶ 43). PO Resp. 10–12 (citing Ex. 1001, 5:35–6:10). We disagree.

The Specification merely distinguishes *non*-pre-allocated codes from pre-allocated codes, explaining that "wireless communication system 100 can alleviate at least some of the latency *by pre-allocating one or more codes to each subscriber station*." Ex. 1001, 5:35–6:10 (emphasis added). According to the Specification, the base station "reduces the probability of random access channel collisions" (i.e., provides non-contention access) "*by pre-allocating one or more codes to select wireless devices*." *Id.* at 1:42–46 (emphasis added). As Patent Owner

concedes, the claim term "non-contention reserved access identifier" merely requires "a reduction in the probability of collision on a random access channel during handover," not eliminating all collisions completely. PO Resp. 17–19. Interpreting this term to exclude randomly selected codes would allow Patent Owner to import the limitation eliminating all collisions completely into the claims.

More importantly, the Specification does not prohibit randomly selected pre-allocated codes. As discussed above, Patent Owner improperly assumes that at least one pre-allocated code has the desired semantic, and the subscriber station would select the pre-allocated code with the desired semantic. PO Resp. 12; Tr. 21:24–26. That assumption is contrary to the Specification. Ex. 1001, 14:44–52. In fact, the Specification makes clear that not every pre-allocated code is assigned a semantic or the desired semantic, and that the subscriber station *randomly would select a pre-allocated code* when the pre-allocated codes with the desired usage type have semantics and none of the semantics is the desired semantic. *Id.* Therefore, we decline to interpret the claimed identifier to exclude randomly selected reserved codes.

Upon consideration of the entire trial record, we adopt the second and third parts, but not the first part, of Patent Owner's proposed claim construction. For this Final Written Decision, we interpret the claim term "non-contention reserved access identifier" as a reserved code that identifies a mobile station to a base station, and reduces the probability of collision on a random access channel during handover. To be clear, we do not construe this claim

term to exclude randomly selected reserved codes, consistent with the Claim Construction Order issued by the district court in the related litigation. Ex. 2013, 40.

C. Principles of Law on Obviousness

A patent claim is unpatentable under 35 U.S.C. § 103(a) 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 the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *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).

D. Obviousness based on Song

Petitioner asserts that claims 1, 3, 4, 8–10, 12, and 15 are unpatentable under 35 U.S.C. § 103(a) as obvious over Song in combination with WiMAX. Pet. 10–54. Petitioner also asserts that claims 16, 17, 20, 21, 25, 27, and 30 are unpatentable under § 103(a) as obvious over Song in combination with WiMAX and Cleveland. *Id.* at 55–83.

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[2] Neither party presents evidence or arguments regarding objective evidence of nonobviousness in this proceeding.

Patent Owner opposes, arguing that neither prior art combination discloses all of the limitations of the challenged claims. PO Resp. 19–37.

For the reasons stated below, we determine that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable.

Song

Song describes a handover ranging system and method for preventing a ranging code collision while minimizing an access delay time in a communication system using an Orthogonal Frequency Division Multiplexing ("OFDM") scheme and an Orthogonal Frequency Division Multiple Access ("OFDMA") scheme, i.e., an OFDM/OFDMA communication system. Ex. 1005 ¶ 102. In particular, Song describes "a handover ranging procedure in an IEEE 802.16e communication system" that utilizes "a handover ranging code and a handover ranging slot for performing a handover ranging without code collisions." *Id.* ¶¶ 100, 103. Song illustrates how ranging codes are "classified into handover ranging codes and ranging codes for the non-handover ranging." *Id.* ¶ 115. The ranging code collision between the handover ranging and non-handover ranging is prevented by distinguishing non-handover ranging codes from handover ranging codes. *Id.*

WiMAX

WiMAX is an IEEE document that specifies the interface for fixed broadband wireless access systems according to various IEEE 802.16 standards. Ex. 1008, 37. WiMAX provides implementation details for complying with the IEEE 802.16 standards, including

those utilizing OFDM/OFDMA methods. *Id.* at 38–39.

Cleveland

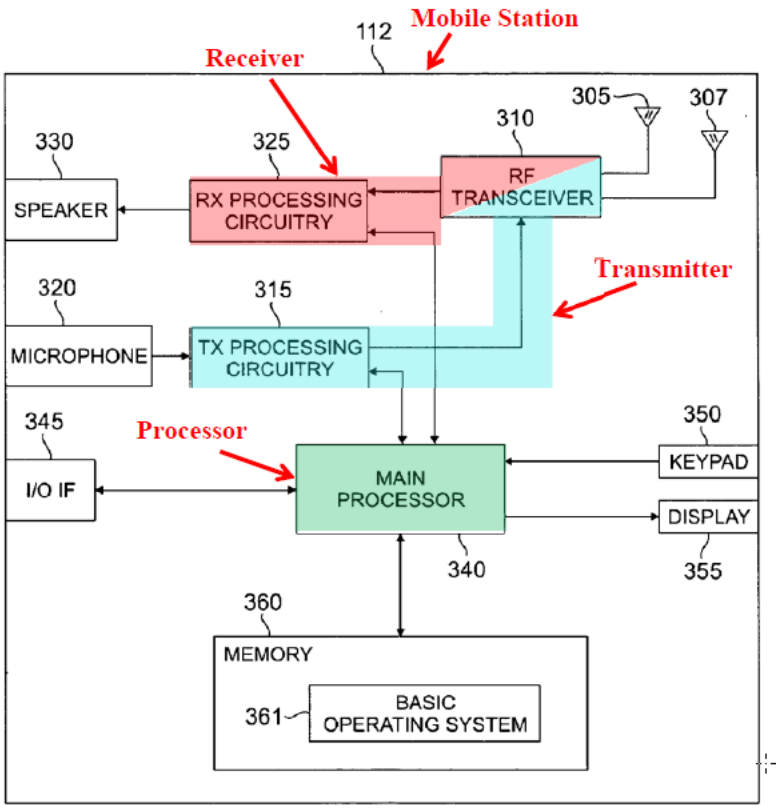
Cleveland describes a wireless network in which base stations communicate with a plurality of mobile stations. Ex. 1007 ¶ 17. Cleveland discloses a mobile station that includes a processor, antenna, transceiver, and receiver. *Id.* ¶ 33.

Independent claims 1, 12, 16, and 27

A mobile station comprising a processor, receiver, and transmitter

Each of independent claims 16 and 27 recites a mobile station comprising a processor, receiver, and transmitter. Ex. 1001, 22:28–49, 23:24–24:17. By virtue of their dependence, claims 17, 20, 21, 25, and 30 also require these hardware components.

Petitioner relies upon Cleveland, in addition to Song and WiMAX, to teach or suggest the claimed hardware components. Pet. 55–83. Cleveland teaches a mobile station configured to implement communications in an OFDMA communication network. Ex. 1007 ¶ 17. Figure 3 of Cleveland is reproduced below with annotation added by Petitioner (Pet. 59).



As shown in annotated Figure 3 of Cleveland above, mobile station 112 comprises main processor 340 (green), antenna 305 and antenna 307, radio frequency (RF) transceiver 310 (red and blue), transmit (TX) processing circuitry 315 (blue), microphone 320, and receiver (RX) processing circuitry 325 (red). Ex. 1007 ¶ 33. Cleveland discloses that "[r]adio frequency (RF) transceiver 310 receives from antennas 305 and 307 incoming RF signals transmitted by one or more base stations of wireless network 100." *Id.* ¶ 34.

Petitioner explains that Song and WiMAX disclose wireless communication systems. Pet. 58; Ex. 1005, Abstract; Ex. 1008, 1. Song describes a conventional IEEE 802.16e communication system having a plurality of mobile subscriber stations. Ex. 1005 ¶ 43. Likewise, WiMAX discloses an IEEE 802.16 standard for wireless access systems and communications between subscriber stations and base stations. Ex. 1008, 1–2, 47–51. Cleveland similarly describes a wireless network including multiple mobile stations, which are capable of operating in an OFDMA mode and communicating with base stations. Ex. 1007 ¶ 17.

Petitioner also explains that, to the extent Song and WiMAX do not explicitly provide details about the hardware components that are part of the mobile station, an ordinarily skilled artisan would have understood that the mobile station of Song and WiMAX includes a processor, transmitter, and receiver, operable to perform 802.16 wireless communication techniques described by Song and WiMAX. Pet. 58–64.

Dr. Akl testifies that such an artisan would have been motivated to implement the OFDMA wireless communication techniques of Song and WiMAX with a mobile station having a processor, transmitter, and receiver, as taught by Cleveland, because it would ensure that the mobile station contains the necessary components to (1) receive signals and messages from a base station (e.g., via a receiver), (2) transmit signals and messages to a base station (e.g., via a transmitter), and (3) execute routines and process signals and messages received from and/or transmitted to the base station (e.g., via a processor).

Ex. 1003 ¶¶ 188–194. We credit Dr. Akl's unrebutted testimony (*id.*) as it is consistent with the prior art of record. *See, e.g.,* Ex. 1005 ¶¶ 46–61, 82, 111–128; Ex. 1007 ¶¶ 33–38, Fig. 3; Ex. 1008, 37–39.

Based on the evidence in this entire trial record, we determine that Petitioner has demonstrated sufficiently that Song, in combination with WiMAX and Cleveland, teaches or suggests a mobile station comprising a processor, receiver, and transmitter, as required by claims 16, 17, 20, 21, 25, 27, and 30. Patent Owner does not proffer separate, specific arguments as to Petitioner's contentions regarding these hardware limitations. *See generally* PO Resp.

First reserved set of access identifiers

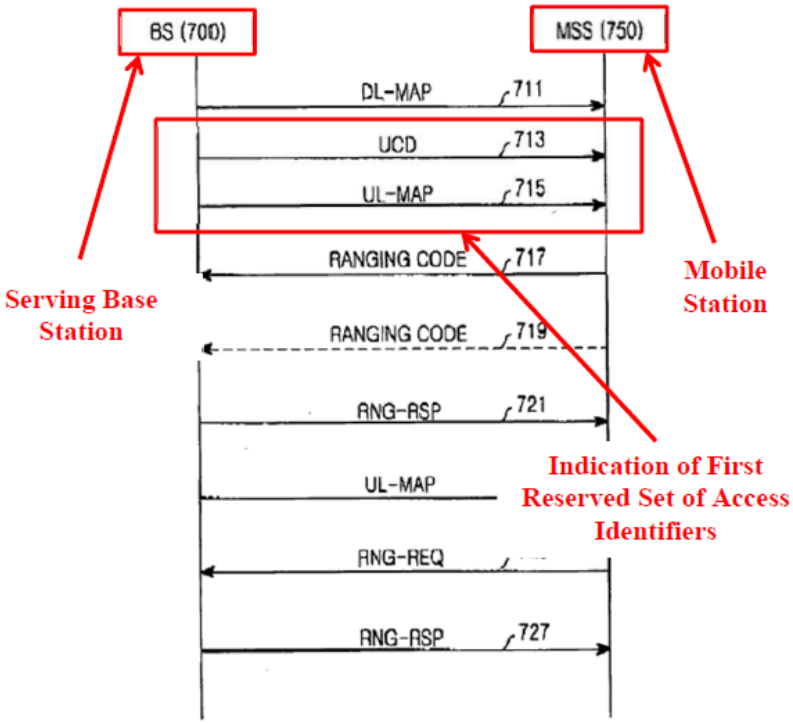
Claim 1 recites "receiving, from a serving base station, an indication of a first reserved set of access identifiers usable for non-contention access over a first random access channel in a coverage area of the serving base station" (the "receiving first set of identifiers" limitation). Ex. 1001, 21:8–12. Claim 16 similarly recites this limitation. *Id.* at 22:29–33.

Petitioner asserts that Song, in combination with WiMAX, teaches or suggests the "receiving first set of identifiers" limitation recited in claim 1, and that Song, in combination with WiMAX and Cleveland, teaches or suggests the "receiver operable to receive" a first set of identifiers, as recited in claim 16. Pet. 20–27, 64–67 (citing Ex. 1003 ¶¶ 67–82). In particular, Petitioner argues that Song's initial ranging codes teach "a first reserved set of access identifiers," as recited in claims 1 and 16. *Id.* Patent Owner does not proffer separate, specific arguments as to Petitioner's contentions regarding these

limitations recited in claims 1 and 16. *See generally* PO Resp. For the reasons stated below, we are persuaded by Petitioner's showing.

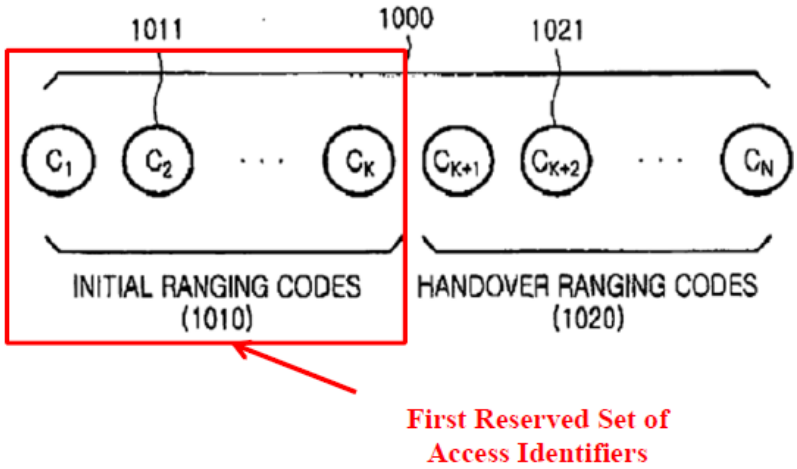
As Petitioner points out (Pet. 20, 21), Song's "initial ranging is performed to synchronize the base station with the [subscriber station]." Ex. 1005 ¶ 33. During the initial ranging, Song's subscriber station "receives the [Downlink-MAP] DL-MAP message and the [Uplink-MAP/Uplink Channel Descript] UP-MAP/ UCD message in order to synchronize with the base station." *Id.* Song discloses that "[t]he UCD message includes information of ranging codes" and "[u]pon receiving UL-MAP message from the base station 700, the [mobile subscriber station] MSS 750 can recognize the ranging code used for the initial ranging." *Id.* ¶¶ 48–50. Dr. Akl testifies that an ordinarily skilled artisan would have recognized that Song's mobile station utilizes the ranging code as an access identifier in the initial ranging procedure, and the base station identifies the mobile station using the ranging code. Ex. 1003 ¶¶ 69–71. We credit Dr. Akl's unrebutted testimony (*id.*) as it is consistent with Song. Ex. 1005 ¶¶ 33, 48–50, Fig. 7.

Figure 7 of Song, as annotated by Petitioner (Pet. 21), is reproduced below.



Annotated Figure 7 of Song shows MSS 750 *receiving* from serving base station BS 700, the UCD and UL-MAP messages (in steps 713 and 715) that allow MSS 750 to determine the set of ranging codes usable for initial ranging. Ex. 1005 ¶¶ 48–50. Accordingly, we agree with Petitioner that the UCD and UL-MAP messages are an "indication of first reserved set of access identifiers," as recited in claims 1 and 16. Pet. 21.

We also agree with Petitioner that Song's initial ranging codes are "usable for non-contention access." *Id.* at 22. Figure 10 of Song, as annotated by Petitioner (*id.*), is reproduced below.



Annotated Figure 10 of Song above illustrates that Song's base station reserves some of the ranging codes for initial ranging 1010 (on the left, annotated as "First Reserved Set of Access Identifiers") and some of the ranging codes for handover ranging 1020 (on the right). Ex. 1005 ¶ 115, Fig. 10. Song's MSS selects an initial ranging code from the set of initial ranging codes 1010 and performs the initial ranging for the initial access. *Id.* ¶ 117. Song describes "[b]y allocating ranging codes for handover ranging (i.e., 'handover ranging codes'), *the ranging code collision between the handover ranging and non-handover ranging is prevented*." Ex. 1005 ¶ 114 (emphasis added). Accordingly, we agree with Petitioner that Song's initial ranging codes are usable for non-contention access because they reduce the probability of collision. Pet. 23.

We also agree with Petitioner that Song's initial ranging codes are "usable for . . . access over a first random access channel." *Id.* (emphasis omitted).

Figure 2 of Song, as annotated by Petitioner (*id.* at 24), is reproduced below.

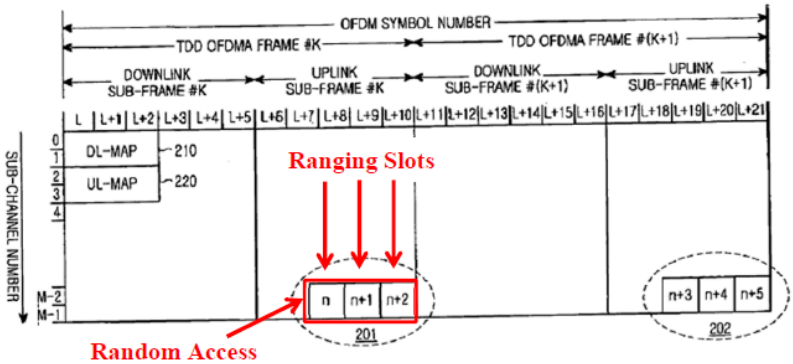


FIG.2
(PRIOR ART)

As annotated Figure 2 of Song shows, Song discloses an OFDMA frame that includes a random access ranging channel and a number ranging slots. In initial ranging, Song teaches that MSS 750 receives the USC and UL-MAP messages from which MSS 750 can recognize a ranging channel. Ex. 1005 ¶¶ 48–50. Song discloses that MSS 750 "randomly selects one ranging slot from the ranging slots used for the initial ranging, and then transmits the selected ranging code to the base station 700 through the selected ranging slot." *Id.* ¶ 50.

Dr. Akl explains that an ordinarily skilled artisan would have understood the ranging channel in Song as a "random access channel" in that mobile subscriber stations may randomly access the ranging channel in the coverage area of the base station for initial ranging. Ex. 1003 ¶ 78. In Dr. Akl's view, because Song teaches transmitting the randomly selected initial ranging code over the randomly

selected slot of the random access ranging channel in the coverage area of the serving base station, Song teaches that the identifiers in the "first reserved set of access identifiers" are "usable for non-contention access over a first random access channel." *Id.* ¶¶ 78–79. We credit Dr. Akl's unrebutted testimony (*id.*) as it is consistent with Song. Ex. 1005 ¶¶ 14–19, 48–50, Figs. 2, 7. Therefore, we are persuaded that Petitioner has shown sufficiently that Song's initial ranging codes are "useable for . . . access over a first random access channel," as recited in claims 1 and 16.

In addition, Petitioner explains that an ordinarily skilled artisan would have understood that Song teaches transmitting the initial ranging code for use "in a coverage area of the serving base station," as required by claims 1 and 16, because Song teaches transmitting the initial ranging code in the coverage area of the serving base station. Pet. 25–26 (citing Ex. 1005, Fig. 6). Figure 6 of Song, annotated by Petitioner (*id.* at 26), is reproduced below.

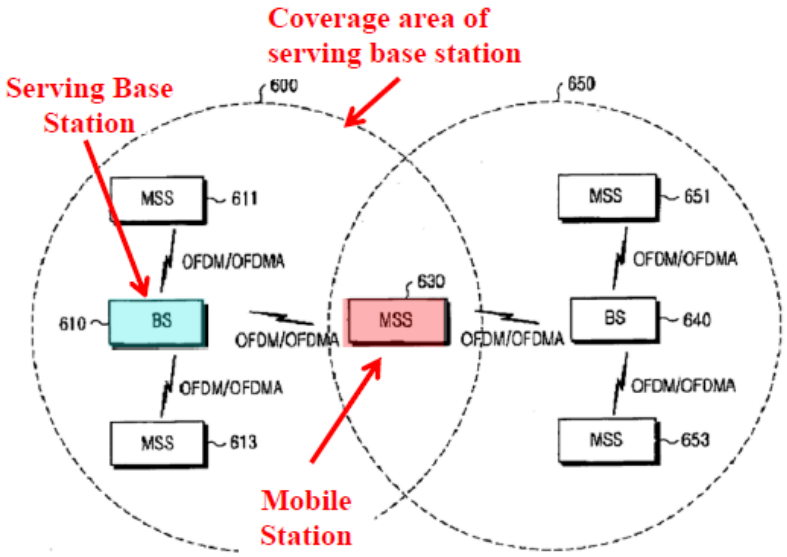


FIG.6

Annotated Figure 6 of Song shows transmission between MSS 630 and BS 610 within coverage area 600. Hence, we are persuaded that Petitioner has shown that Song's initial ranging codes are usable in a coverage area of the serving base station, as required by claims 1 and 16.

Based on the evidence in this entire trial record, we determine that Petitioner has demonstrated sufficiently that Song, in combination with WiMAX, teaches or suggests "receiving, from a serving base station, an indication of a first reserved set of access identifiers usable for non-contention access over a first random access channel in a coverage area of the serving base station," as recited in claims 1 and 16. As noted above, Patent Owner does not proffer separate, specific arguments as to Petitioner's contentions regarding these limitations recited in claims 1 and 16. *See generally* PO Resp.

Non-contention reserved access identifier

Each of independent claims 1, 12, 16, and 27 recites "a non-contention reserved access identifier." For example, claim 1 recites:

> obtaining, *during a handover* of the mobile station from the serving base station to a target base station, an indication of *a non-contention reserved access identifier* identifying the mobile station in a coverage area of the target base station.

Ex. 1001, 21:13–17 (emphases added). Claim 16 recites a similar limitation. *Id.* at 22:29–38. Claim 12 recites:

> receiving a message providing the mobile station with an indication of a non-contention reserved access identifier available for use by the mobile station in a coverage area of a target base station, the non-contention reserved access identifier belonging to a set of access *identifiers reserved for non-contention access to the target base station*.

Id. at 22:2–8 (emphases added). Claim 27 recites a similar limitation. *Id.* at 23:26–24:4. By virtue of their dependency, claims 3, 4, 8–10, 15, 17, 20, 21, and 25 also require this limitation.

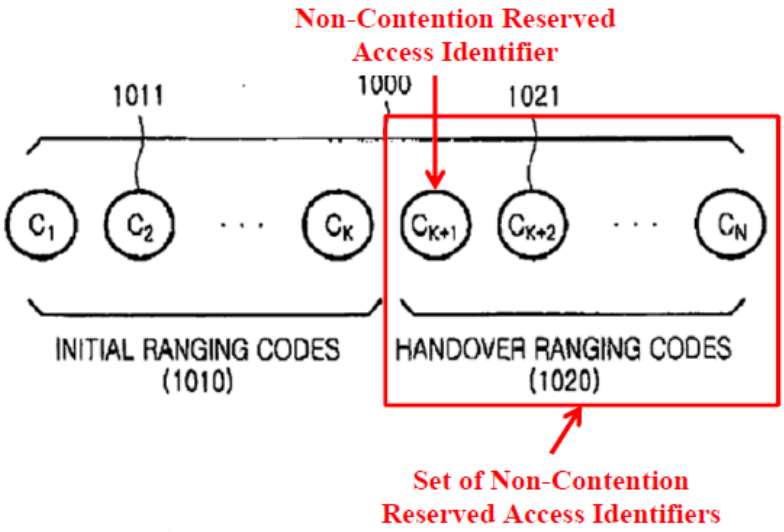
As discussed above in the claim construction section, we adopt the second and third parts, but not the first part, of Patent Owner's proposed claim construction. For this Final Written Decision, we interpret the claim term "non-contention reserved access identifier" as a reserved code that identifies a mobile station to a base station, and reduces the

probability of collision on a random access channel during handover. We do not construe this claim term to exclude randomly selected reserved codes.

Petitioner relies upon Song, in combination with other asserted prior art references, to teach or suggest the "non-contention reserved access identifier" limitations. Pet. 10–13, 20–32, 46–47, 68–69, 76–79 (citing Ex. 1003 ¶¶ 83–95). Petitioner asserts that Song's reserved handover ranging codes teaches or suggests the claimed "non-contention reserved access identifier." *Id.* We agree.

Petitioner points out that Song describes a "*handover* ranging procedure in the IEEE 802.16e system" in which "a mobile subscriber station (MSS) that is serviced by a serving base station is handed over to a target base station." Ex. 1005 ¶¶ 83, 119 (emphasis added). In handover ranging, a UCD message, which includes *information of ranging codes*, and a UL-MAP message are sent from the base station to the mobile station. *Id.* ¶ 121 (emphasis added). Upon receiving the messages, "MSS 1150 can recognize handover ranging codes used for a handover ranging . . . a handover ranging channel, and a handover ranging slot." *Id.* ¶¶ 121–22.

As Petitioner explains, Song reserves some ranging codes for handover ranging and reserves other ranging codes for initial ranging. *Id.* ¶ 115, Fig. 10. Figure 10 of Song, annotated by Petitioner (Pet. 29), is reproduced below.



As shown in annotated Figure 10 above, ranging codes 1000 are classified into handover ranging codes 1020 (annotated by Petitioner in red, as a "Set of Non-Contention Reserved Access Identifiers") and ranging codes for the non-handover ranging 1010 (labeled as "INITIAL RANGING CODES" on the left). Ex. 1005 ¶ 115. According to Song, "[b]y allocating ranging codes for the handover ranging (i.e., 'handover ranging codes'), the *ranging code collision* between the handover ranging and non-handover ranging is prevented." *Id.* ¶ 114 (emphases added); *see also id.* ¶ 103 (disclosing that "the present invention proposes a handover ranging code and a handover ranging slot for performing a handover ranging *without ranging code collisions*" (emphasis added)).

Petitioner points out that Song's UCD and UL-MAP messages obtained by the mobile station from the target base station during handover provide an *indication of ranging codes usable for handover*

ranging. Pet. 29. Song discloses that "MSS 1150 randomly selects a handover ranging code from the [received] handover ranging codes used for the handover ranging, and transmits the selected handover ranging code to the base station." Ex. 1005 ¶ 123.

Petitioner explains that the target base station *identifies the mobile station* by using the handover ranging code. Pet. 30, 31. Petitioner also explains that a person of ordinary skill in the art would have recognized that, for the target base station to transmit back to the mobile station, the mobile station must be identified by the target base station. *Id.* Song discloses that when the mobile station transmits a ranging code to the base station, the base station identifies the ranging code and responds to the mobile station with a RNG-RSP message that includes the same ranging code "indicating the successful receipt of the handover ranging code." Ex. 1005 ¶¶ 123, 125.

As support, Dr. Akl testifies that an ordinarily skilled artisan would have recognized that the handover ranging codes in Song correspond to non-contention reserved access identifiers, and the selected handover ranging code is the claimed "non-contention reserved access identifier." Ex. 1003 ¶¶ 85–90. Dr. Akl also testifies that such an artisan would have recognized that the selected handover ranging code is used to identify the mobile station in the coverage area of the target base station. *Id.* ¶¶ 91–94. We credit Dr. Akl's testimony (*id.* ¶¶ 85–94) as it is consistent with Song's disclosure. *See* Ex. 1005 ¶¶ 111–125, Figs. 10, 11.

Based on the evidence in this entire trial record, we determine Petitioner has demonstrated sufficiently that Song teaches a "non-contention reserved access identifier," as required by the challenged claims.

Patent Owner opposes, advancing several arguments. First, Patent Owner argues that Song does not disclose the claimed "non-contention reserved access identifier" because Song's mobile station "*randomly selects* a handover ranging code from the handover ranging codes used for the handover ranging." PO Resp. 20–22 (emphasis added).

However, Patent Owner's argument improperly rests on the first part of its proposed claim construction that *excludes randomly selected codes*, which we decline to adopt as it would improperly import a negative limitation from a Specification embodiment into the claims, as noted above in the claim construction section. In fact, the '320 patent discloses a preferred embodiment in which the subscriber station *randomly select*s a pre-allocated code. Ex. 1005, 14:42–52. Therefore, Patent Owner's argument that Song does not disclose the claimed "non-contention reserved access identifier" because Song's mobile station "*randomly selects* a handover ranging code from the handover ranging codes used for the handover ranging" is unavailing. Based on the evidence before us, we find Petitioner has shown sufficiently that Song teaches "a non-contention reserved access identifier," as recited in the challenged claims.

Second, Patent Owner argues that Song's handover ranging code does not *identify* the mobile station because, like the prior art discussed in the '320 patent, Song's mobile device *randomly selects* its own code from amongst a group of codes assigned to all mobile stations. PO Resp. 22–25; Ex. 2006 ¶ 79. Patent Owner contends that, in contrast, the claimed "reserved code" identifies the mobile device to the target base station because the code is *assigned to a specific mobile device*. PO Resp. 22–25.

Patent Owner's argument is misplaced, however. As discussed above in the claim construction section, the '320 patent merely distinguishes the prior art codes that are *not pre-allocated* from codes that are *pre-allocated*. And, in a preferred embodiment, the '320 patent discloses that the subscriber station *randomly selects* a pre-allocated code. Ex. 1005, 14:42–52.

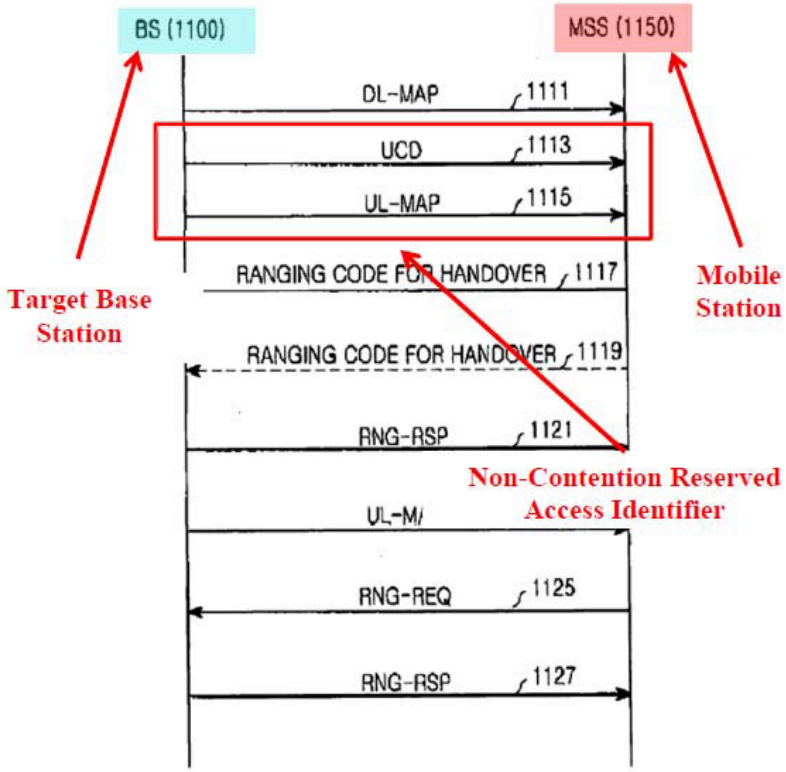
Significantly, in its claim construction briefs filed in a related district court litigation, Patent Owner concedes that the plain claim language of independent claims 1, 12, 16, and 27 "merely state that the 'non-contention reserved access identifier [is for] identifying the mobile station' or 'available for use by the mobile station.'" Ex. 2003, 26; Ex. 2009, 28 (citing Ex. 1001, 21:15–16, 22:3–4, 22:36–37, 23:26–24:1) (bracketed matters added by Patent Owner). Patent Owner admits that the claim term "does not impose a requirement that the identifier or code be 'unique' to the mobile station." Ex. 2003, 26, 27; Ex. 2009, 28. Patent Owner also admits that such "uniqueness" requirement would exclude a preferred embodiment disclosed in the Specification. Ex. 2003, 26, 27. Patent Owner confirms that "[t]he

specification states that 'each subscriber station can *potentially* be assigned a distinct set of codes,' leaving room for a 'potential' embodiment where the codes are not distinct or unique." *Id.* (quoting Ex. 1001, 3:3–5) (emphasis added by Patent Owner). Patent Owner further admits that because the "uniqueness" requirement is expressly claimed in dependent claims 15 and 30, which state that the identifier "*uniquely* identifies the mobile station," it "gives rise to a presumption (under the doctrine of claim differentiation) that the identifiers of the independent claims need not be unique/distinct." Ex. 2003, 26; Ex. 2009, 28 (emphasis added by Patent Owner). Moreover, the district court in the related litigation agreed with Patent Owner and rejected the opposing contention that requires the claimed identifier to distinct and uniquely identify the mobile station to the target base station. Ex. 2013, 35–36.

More importantly, similar to the '320 patent in which the base station can "pre-allocate multiple codes with the same usage type" (Ex. 1001, 8:27–29, 14:17–21), Song reserves ranging codes for particular usage type to reduce the probability of collision (Ex. 1005 ¶¶ 111, 114, 115). Notably, Song's "base station assigns available ranging codes to the [mobile subscriber station] according to the object or the type of the rangings," reserving a group of ranging codes for handover. *Id.* ¶ 114. "By allocating ranging codes for the handover ranging (i.e., 'handover ranging codes'), the ranging code collision between the handover ranging and non-handover ranging is prevented." *Id.*

In addition, Song discloses a handover ranging procedure in the IEEE 802.16e communication

system. *Id.* ¶¶ 119–130, Fig. 11. Figure 11 of Song describes an OFDM communication system based on CDMA ("Code Division Multiple Access") scheme. Figure 11 of Song, annotated by Petitioner (Pet. 28), is reproduced below.



Annotated Figure 11 of Song is a flow diagram illustrating a handover ranging procedure in an IEEE 802.16e communication system according to Song's invention. Ex. 1005 ¶ 100. Song describes that "the MSS 1150 . . . transmits the selected handover ranging code to the base station 1100 through the selected handover ranging slot in Step 1117." *Id.* ¶ 123. "Upon receiving a random handover ranging

code . . . from the MSS 1150, the base station 1100 transmits, to the MSS 1150, a *ranging response* (RNG-RSP) message including the information indicating *the successful receipt of the handover ranging code*, for example an OFDMA symbol number, a subchannel, and *a ranging code*, in Step 1121." *Id.* ¶ 125, Fig. 11 (emphases added). Song further explains that "upon receiving the RNG-RSP message, the MSS 1150 adjusts the time and the frequency offsets and transmission power using the information included in the RNG-RSP message." *Id.* Base station 1100 additionally "transmits a UL-MAP messages including the CDMA Allocation IE for the MSS 1150 to MSS 1150 in Step 1123." *Id.* ¶ 126. "The CDMA Allocation IE includes information on an uplink bandwidth at which the MSS 1150 will transmit a ranging request (RNG-REQ) message." *Id.*

Dr. Akl testifies that a person of ordinary skill in the art would have understood that CDMA ranging codes were utilized to identify the mobile station in the communication between the mobile station and the target base station. Ex. 1003 ¶¶ 92–94. Dr. Akl also testifies that, in the transmission from the mobile station to the target base station, the CDMA code identifies the mobile station to the base station, and, likewise, in the transmission from the target base station to the mobile station, the CDMA code identifies the mobile station. Ex. 1015 ¶¶ 30–33. We credit Dr. Akl's testimony (Ex. 1003 ¶¶ 92–94; Ex. 1015 ¶¶ 30–32) as it is consistent with the prior art of record. *See, e.g.,* Ex. 1005 ¶¶ 111–130, Fig. 11; Ex. 1017, 1:18–40 ("In the CDMA method, . . . [a] separate spreading code is used over each connection between a base station and a subscriber equipment,

and the signals of the users *can be distinguished from one another* in the receivers *on the basis of the spreading code* of each connection." (emphases added by Dr. Akl)); Ex. 1018, 1:14–20 ("Code Division Multiple Access (CDMA) protocol involves the *use of a unique code to distinguish each user's data signal from other users data signals*." (emphasis added by Dr. Akl)).

For the foregoing reasons, Patent Owner's argument that Song's handover ranging code does not identify the mobile station is unavailing. Based on the evidence before us, we find Petitioner has shown sufficiently that Song teaches "a non-contention reserved access identifier identifying the mobile station in a coverage area of the target base station," as recited in the challenged claims.

Third, Patent Owner argues that "Song does not reduce the probability of collision on a random access channel during handover." PO Resp. 25–26. As support, Dr. Lomp testifies that "Song's methodology actually increases the probability of collision between handover ranging codes" because it "reduces the universe of potential codes used for handover ranging" and "when a mobile device randomly selects a handover ranging code, there are fewer possible codes from which to select." Ex. 2006 ¶ 85.

However, Dr. Akl testifies that reducing the universe of potential codes used for handover ranging does not necessarily increase the probability of collision because "the number of mobile stations performing a handover . . . is typically much smaller such that the mobile stations performing handover ranging are less likely to select the same code as another mobile station." Ex. 1015 ¶ 37.

More importantly, Patent Owner already concedes that "Song is describing access in which there is *no contention* between a handover ranging and non-handover ranging," and "*avoids* a single type of *contention*." Prelim. Resp. 17–18 (emphases added). Indeed, Song discloses that "[b]y allocating ranging codes for the handover ranging (i.e., 'handover ranging codes'), the *ranging code collision* between the handover ranging and non-handover ranging *is prevented*." Ex. 1005 ¶ 114, Fig. 10 (emphases added); *see also id.* ¶ 103 (disclosing that "the present invention proposes a handover ranging code and a handover ranging slot for performing a handover ranging *without ranging code collisions*" (emphasis added)). In addition, Song discloses that "[f]or example, if the MSS#1 performs the non-handover ranging with the initial ranging code C2 1011, and the MSS#2 performs the handover ranging with a handover ranging code C_{K+2} 1021, *the ranging code collision does not occur*." *Id.* ¶ 118 (emphasis added).

Based on the evidence in this entire trial record, we credit the testimony of Dr. Akl (Ex. 1015 ¶ 37) over that of Dr. Lomp (Ex. 2006 ¶ 85). *See Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding that Board has discretion to give more weight to one item of evidence over another "unless no reasonable trier of fact could have done so"). We find that Dr. Akl's explanations are consistent with Song's disclosure. *See, e.g.,* Ex. 1005 ¶¶ 103, 114, 115, 118, Fig. 10.

Accordingly, we do not find Patent Owner's argument that "Song does not reduce the probability of collision on a random access channel during

handover" undermines Petitioner's showing. In light of the foregoing, we determine that Petitioner has demonstrated sufficiently that Song teaches a "non-contention reserved access identifier," as recited in the challenged claims.

Transmitting an identifier over a second random access channel

Claim 1 recites "transmitting the non-contention reserved access identifier to the *target base station over a second random access channel* in the coverage area of the target base station." Ex. 1001, 21:18–20 (emphasis added). Each of claims 12, 16, and 27 also recites a similar limitation. *Id.* at 22:12–14, 22:39–42, 24:9–11.

Petitioner asserts that Song in combination with WiMAX alone renders claims 1 and 12 obvious, and that Song in combination with WiMAX and Cleveland renders claims 16 and 27 obvious. Pet. 32–35, 51, 52, 69–71, 80–82. As support, Petitioner explains that the mobile station, in Song, transmits a selected handover ranging code to the target base station. *Id.*; Ex. 1005 ¶ 123 (describing that "MSS 1150 . . . transmits the selected handover ranging code to the base station"). Petitioner takes the position that the selected handover ranging code in Song is a "non-contention reserved access identifier." Pet. 32. According to Petitioner, an ordinarily skilled artisan would have understood that Song teaches transmitting the handover ranging code "in the coverage area of the target base station" because Figure 6 of Song (reproduced above) depicts transmission between mobile subscriber station 630 and target base station 640 within coverage area 650 of target base station 640. *Id.* at 32–33 (citing Ex.

1005, Fig. 6). Petitioner also explains that Song's selected handover ranging code is transmitted "over a second random access channel" because Song describes that the mobile station "randomly selects a handover ranging slot from the handover ranging slots used for the handover ranging, and transmits the selected handover ranging code to the base station 1100 through the selected handover ranging slot." Pet. 33–35 (citing Ex. 1005 ¶ 123).

Patent Owner counters that Petitioner offers no evidence that the handover ranging code, in Song, is transmitted to a different base station over a different random access channel than that used for the initial ranging codes. PO Resp. 26–31. According to Patent Owner, "nothing in Figure 6 (or anywhere else in Song) teaches or suggests which base stations, 610 and/or 640, transmit the initial ranging codes and handover ranging codes," and "nothing in Figures 7 and 11 (or anywhere else in Song) teaches which, if any, of base stations 700 and 1100 are target base stations." *Id.* (citing Ex. 2006 ¶¶ 87, 89).

Upon consideration of the evidence in this entire trial record, we are persuaded by Petitioner's showing, and we do not find Patent Owner's argument undermines Petitioner's showing. As Petitioner explains, Song teaches transmitting an initial ranging code over a first random access channel of serving base station 700, shown in Figure 7 of Song (reproduced above), and transmitting a handover ranging code over a second random access channel of target base station 1100, shown in Figure 11 of Song (reproduced above). Pet. 23–25, 32–35; Ex. 1005 ¶¶ 83, 119, Figs. 7, 11.

Patent Owner does not dispute that Song teaches or suggests transmitting an initial ranging code over a first random access channel of a serving base station 700. *See generally* PO Response. Indeed, Dr. Lomp admits that Song suggests that base station 700 (shown in Figure 7 of Song) is an initial *serving* base station, the base station to which the mobile station attaches during initial power-up. Ex. 2006 ¶ 90. In addition, during cross examination, Dr. Lomp also concedes that base station 1100 (shown in Figure 11 of Song) is a target base station and that mobile subscriber station 1150 in step 1117 is sending a range code for handover to *target* base station 1100. Ex. 1016, 139:22–141:2; Ex. 1005 ¶¶ 119–123, Fig. 11.

In light of the foregoing, we determine that Petitioner has established sufficiently that Song, in combination with WiMAX, and in combination with WiMAX and Cleveland, teaches or suggests "transmitting the non-contention reserved access identifier to the target base station over a second random access channel," as recited in claims 1, 12, 16 and 27.

Receiving an indication of a non-contention reserved access identifier

Claim 12 recites

> receiving a message providing the mobile station with an *indication of a non-contention reserved access identifier* available for use by the mobile station, the non-contention reserved access *identifier belonging to a set of access identifiers*

reserved for non-contention access to target base station.

Ex. 1001, 22:2–8 (emphases added) (the "indication" limitation). Claims 16 and 27 recite similar limitations. *Id.* at 22:34–38, 23:26–24:4

Petitioner asserts that Song, in combination with WiMAX, renders the "indication" limitation recited in claim 12 obvious, and that Song, in combination with WiMAX and Cleveland, renders the "indication" limitations recited in claims 16 and 27 obvious. Pet. 46–48, 68–69, 76–79. Petitioner relies upon its analysis for claim 1 that shows Song teaches the limitation "obtaining . . . an indication of a non-contention reserved access identifier identifying the mobile station in a coverage area of the target base station," which we discussed above. *Id.* at 20–32. Petitioner explains that Song's UCD and UL-MAP messages received by the mobile station from the target base station during handover provides an indication of ranging codes usable for handover ranging. *Id.*; Ex. 1003 ¶¶ 86–88; Ex. 1005 ¶¶ 114, 115, 119, 121, 122, Figs. 10, 11. We agree with Petitioner.

Patent Owner argues that the aforementioned "indication" claim limitation requires an indication of "a particular identifier for the mobile station at the time of receipt." PO Resp. 31–32. According to Patent Owner, receiving a common set of handover ranging codes for every mobile station in a coverage area does not indicate a *specific* non-contention reserved access identifier to be used by the mobile station. *Id.*

Upon consideration of the evidence in this entire trial record, we are persuaded by Petitioner's

showing, and we do not find Patent Owner's argument undermines that showing.

Patent Owner once again attempts to import improperly a limitation from a preferred embodiment into the claims. Nothing in the claim language excludes receiving a set of identifiers, or requires an indication of a specific identifier. As Dr. Akl explains, one ordinary skill in the art reading the claim language would have understood that it does not require the identifier to be received individually because the identifier could be part of a set of identifiers. Ex. 1015 ¶ 46. In fact, the "indication" limitation, as recited in claims 12 and 27, requires the claimed identifier to belong to a set of identifiers. Ex. 1001, 22:5–8, 24:2–4.

As discussed above, Patent Owner admits that the claim language "does not impose a requirement that the identifier or code be 'unique' to the mobile station." Ex. 2003, 26. Patent Owner also concedes that such a "uniqueness" requirement would exclude a preferred embodiment disclosed in the Specification, and that "[t]he specification states that 'each subscriber station can *potentially* be assigned a distinct set of codes, leaving room for a 'potential' embodiment where the codes are not distinct or unique." *Id.* at 27 (quoting Ex. 1001, 3:3–5) (emphasis added by Patent Owner). Significantly, the '320 patent makes clear that, in a preferred embodiment, the subscriber station *randomly selects* a pre-allocated code from a set of codes. Ex. 1001, 14:44–52.

Similar to the '320 patent, Song reserves a set of ranging codes for handover. Ex. 1005 ¶¶ 114, 115, Fig. 10. Petitioner explains that Song describes a

"handover ranging procedure in the IEEE 802.16e system" in which "a mobile subscriber station (MSS) that is serviced by a serving base station is handed over to a target base station." Pet. 27; Ex. 1005 ¶¶ 83, 119. In handover ranging, Song's "base station 1100 transmits an Uplink Channel Descript (UCD) message to the MSS . . . the UCD message includes information of ranging codes." Ex. 1005 ¶ 121. And, "base station 1100 then transmits a UL-MAP message to the MSS." *Id.* "Upon receiving the UL-MAP message from the base station 100, the MSS 1150 can recognize handover ranging codes used for a handover ranging." *Id.* ¶¶ 121, 122. As Petitioner explains, Song's UCD and UL-MAP messages obtained by the mobile station from the target base station during handover provides an indication of ranging codes usable for handover ranging. Pet. 29; Ex. 1003 ¶¶ 86–88.

Therefore, Patent Owner's argument that Song does not teach or suggest receiving an indication of a non-contention reserved access identifier is unavailing. Based on the evidence in this entire trial record, we determine that Petitioner has established sufficiently that Song, in combination with other asserted prior art references, teaches the aforementioned "indication" limitations, as recited in claims 12, 16, and 27.

Other limitations

Petitioner provides detailed explanations for other limitations recited in claims 1, 12, 16, and 27, citing to Dr. Akl's testimony for support. Pet. 15–19, 35–38, 48–53, 71–74, 82, 83; Ex. 1003 ¶¶ 52–63, 104–109, 154–175, 219–230, 263–274. Patent Owner does not proffer separate, specific arguments as to

Petitioner's contentions regarding those limitations. *See generally* PO Resp.

We have considered Petitioner's contentions and supporting evidence, and agree with Petitioner's explanations and Dr. Akl's unrebutted testimony regarding those limitations. We adopt Dr. Akl's analysis as our own.

For instance, claim 1 recites "receiving, from the target base station, a feedback message comprising *a timing adjustment*," and each of claims 12, 16, and 27 recites a similar limitation. *See, e.g.*, Ex. 1001, 21:21–22 (emphasis added). Claim 1 recites "adjustment at least one operating parameter of a transmission from the mobile station to the target base station based at least in part on the feedback message." *Id.* at 21:23–25. Claim 16 recites a similar limitation. *Id.* at 22:43–45. Claim 12 recites "adjusting uplink transmission timing of the mobile station using the timing adjustment." *Id.* at 22:17–18. Claim 27 recites a similar limitation. *Id.* at 24:15–17.

For these "timing adjustment" limitations, Petitioner explains that Song's RNG-RSP message teaches a feedback message comprising a timing adjustment because Song discloses that target "base station 1100 transmits, to the MSS 1150, a ranging response (RNG-RSP) message" and "upon receiving the RNG-RSP message [from target base station 1100], the MSS 1150 *adjusts the time and the frequency offsets . . . using the information included in the RNG-RSP message*." Pet. 15–19, 35–38, 52, 53, 71–74, 82, 83 (quoting Ex. 1005 ¶ 125) (emphases added). WiMAX also explicitly teaches that the RNG-

RSP message includes a timing adjustment. Ex. 1008, 665, Table 367.

Dr. Akl testifies that a person of ordinary skill in the art would have understood that it was common practice for the RNG-RSP message to include a timing adjustment. Ex. 1003 ¶¶ 107–108. Dr. Akl also testifies that such an artisan would have been motivated to include a timing adjustment, as taught by WiMAX, in Song's RNG-RSP message because it would allow for Song's method and devices to comply with the 802.16 standard to provide the benefits of enabling rapid worldwide deployment of innovative, cost-effective, and interoperable products and systems to accelerate commercialization. *Id.* ¶¶ 59–61; Ex. 1008, 1. We credit Dr. Akl's testimony (Ex. 1003 ¶¶ 59–61, 107–108) as it is consistent with the prior art of record. *See, e.g.,* Ex. 1005 ¶ 125; Ex. 1008, 1, 665.

Based on the evidence in this entire trial record, we determine that Petitioner has established that Song, in combination with other asserted prior art references, teaches the aforementioned "timing adjustment" limitations recited in claims 1, 12, 16, and 27.

Claim 12 recites "receiving information about a shared random access channel available in the coverage area of the target base station." Ex. 1001, 22:9–11. Claim 27 recites a similar limitation. *Id.* at 24:6–8.

For this "shared random access channel" limitation, Petitioner explains that Figure 2 of Song (reproduced above) shows each OFDMA frame having a random access ranging channel and a number of

ranging slots. Pet. 48–51 (citing Ex. 1003 ¶ 156, Fig. 2). Song also discloses that upon receiving UCD and UL-MAP messages from the target base station, "MSS 1150 can recognize . . . a handover ranging channel." Ex. 1005 ¶¶ 121, 122. Song further discloses that the mobile station selects a handover ranging code and a handover ranging slot, and transmits the selected code to the target base station through the selected slot. Ex. 1005 ¶ 123. Dr. Akl testifies that a person of ordinary skill in the art would have understood that Song's handover ranging channel is a "shared random access channel" because mobile stations may randomly access the handover ranging channel in the coverage area of the target base station for handover ranging. Ex. 1003 ¶ 158.

Based on the evidence in this entire trial record, we determine that Petitioner has established that Song, in combination with other asserted prior art references, teaches the aforementioned "shared random access channel" limitation, as recited in claims 12 and 27.

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1 and 12 are unpatentable under § 103(a) as obvious over Song in combination with WiMAX, and that claims 16 and 27 are unpatentable under § 103(a) as obvious over Song, in combination with WiMAX and Cleveland.

Dependent claims 8 and 17 – releasing identifier

Claim 8 depends from claim 1 and further recites "*releasing* the non-contention reserved access identifier subsequent to adjusting the at least one operating parameter of a transmission from the

mobile station to the target base station" (the "releasing" limitation). Ex. 1001, 21:51–55. Claim 17 depends from claim 16 and further recites a similar limitation. *Id.* at 22:50–54.

Petitioner asserts that Song, in combination with other asserted prior art references, teaches this "releasing" limitation. Pet. 41–43, 74–75. Specifically, Song teaches that a subscriber station that has adjusted its time offset and transmit power through initial ranging subsequently performs periodic ranging, using periodic ranging codes, instead of the handover ranging codes. *Id.* at 41 (citing Ex. 1005 ¶ 36). Dr. Akl testifies that a person of ordinary skill in the art would have understood that periodic ranging would occur *after* Song's handover ranging because handover ranging is a form of an initial ranging with the target base station. Ex. 1003 ¶ 128 (citing Ex. 1005 ¶¶ 77, 107 (noting that "the MSS performs the initial ranging according to the handover (handover ranging)")). Dr. Akl also testifies that "the handover ranging code (the 'non-contention reserved access identifier') initially used by the mobile station to connect to the target base station is not used for periodic ranging." *Id.* ¶ 129. Dr. Akl further testifies that "[w]hen the mobile station transitions to periodic ranging, after adjusting its time offset and transmit power through handover ranging, the mobile station will no longer use the handover ranging code." *Id.* Dr. Akl explains that "[a]s a result, the handover ranging code initially used by the mobile station to connect to the target base station *is released* by the mobile station and available for other mobile stations to use for handover ranging." *Id.* (emphasis added).

Based on the evidence before us, we are persuaded by Petitioner's explanation and supporting evidence that Song suggests the aforementioned "releasing" limitation.

Patent Owner counters that Song does not disclose releasing the identifier. PO Resp. 32–35. Patent Owner argues that "[b]ecause Song's mobile stations can simultaneously be assigned multiple types of ranging code . . . , it does not follow that the mobile station must necessarily 'release' its handover ranging code once it begins using its periodic ranging code." *Id.* at 34. As support, Dr. Lomp testifies that Song "never mentions any 'release.'" Ex. 2006 ¶¶ 92–96.

However, an obviousness analysis is not an *ipsissimis verbis* test. *Cf. In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (noting that, in an anticipation analysis, "the reference need not satisfy an *ipsissimis verbis* test"). Rather, the test for obviousness is whether the combination of references, taken as a whole, would have suggested the patentees' invention to a person having ordinary skill in the art. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Moreover, prior art references must be "considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Neither Patent Owner nor Dr. Lomp challenges Dr. Akl's testimony that a person of ordinary skill in the art would have recognized that: (1) Song's periodic ranging occurs after the handover ranging; (2) Song's handover ranging is a form of an initial ranging with the target base station; and (3) when the mobile station transitions to period ranging, after

adjusting its time offset and transmit power through handover ranging, the mobile station will no longer use the handover ranging code. PO Resp. 32–35; Ex. 2006 ¶¶ 92–96. We credit Dr. Akl's unrebutted testimony (Ex. 1003 ¶¶ 128, 129), as it is consistent with Song (Ex. 1005 ¶¶ 36, 77, 107).

More importantly, as discussed above, Song's handover ranging codes are CDMA codes. Ex. 1005 ¶¶ 111, 115, 119–122, Fig. 11. During cross examination, Dr. Lomp testifies that all CDMA codes used to identify a mobile device are released at some point in time because "all of them are released back into the pool after they're no longer needed." Ex. 1016, 82:7–16. In particular, Dr. Lomp's cross-examination testimony includes the following discussion (*id.*, emphases added):

> Q. . . . . Are *all CDMA codes that are used to identify a mobile device released* at some point in time?
>
> [Dr. Lomp's answer:] I would say, generally, yes, the resources associated with a call for - - that are specifically allocated to a device are - - are released, like time slots, frequencies, or *codes*, they're - - *all of them are released back into the pool after they're no longer needed*.

Furthermore, Dr. Akl agrees with Dr. Lomp and confirms that a person of ordinary skill in the art would have understood that "a CDMA code used to identify a mobile station will be released at some point in time, including when the CDMA code is no longer needed," such as when the mobile station

transitions from handover ranging to a period ranging. Ex. 1015 ¶¶ 52–54.

Accordingly, Patent Owner's argument that Song does not teach or suggest the "releasing" limitation is unavailing. In view of the foregoing, we determine that Petitioner has established sufficiently that Song, in combination with other asserted prior art references, teaches or suggests "releasing the non-contention reserved access identifier," as recited in claims 8 and 17, and renders claims 8 and 17 obvious.

Dependent claims 15 and 30 - uniquely identifies the mobile station

Dependent claim 15 depends from claim 12, and further recites "the non-contention reserved access identifier *uniquely identifies* the mobile station in the coverage area of the target base station." Ex. 1001, 22:25–27 (emphasis added). Claim 30 depends from claim 27, and further recites the same limitation. *Id.* at 24:24–26.

Petitioner asserts that Song, in combination with WiMAX, renders claim 15 obvious, and that Song, in combination with WiMAX and Cleveland, renders claim 30 obvious. Pet. 53, 54, 83. Petitioner explains that Song teaches that a handover ranging code ("non-contention reserved access identifier") uniquely identifies a mobile station because a person of ordinary skill in the art would have recognized that, for the target base station to transmit back to the intended mobile station, the mobile station must be uniquely identified by the target base station. *Id.* We agree with Petitioner.

Patent Owner counters that, because it is potentially possible that two mobile stations in Song can randomly select the same handover ranging code, the handover ranging code would not uniquely identify either mobile station in such a situation. PO Resp. 35–37. Patent Owner also argues "that a base station can differentiate between two mobile stations does not uniquely identify either mobile station." *Id.* at 37.

Patent Owner's argument is unavailing as it ignores the express disclosure of Song. Notably, Song recognizes the problem that "[w]hen the ranging codes collide with each other, the base station cannot identify the collided ranging codes, and thus cannot transmit the RNG-RSP message." Ex. 1005 ¶¶ 56, 116. To solve this known problem, Song consistently and repeatedly discloses "a handover ranging system and a method for *preventing a ranging code collision*." *See, e.g., id.* ¶ 102 (emphasis added); *see also id.* ¶¶ 103 (noting that "the present invention proposes a handover ranging code and a handover ranging slot for performing a handover ranging without ranging code collisions"), 108 (noting that "the ranging code collision between the handover ranging and the conventional initial ranging of the initial access (non-handover ranging) is prevented, so a fast handover is performed"), 114 (noting that "[b]y allocating ranging codes for the handover ranging (i.e., 'handover ranging codes'), the ranging code collision between the handover ranging and non-handover ranging is prevented"), 115 (noting that "[t]he ranging code collision between the handover ranging and non-handover ranging is prevented"), 118 (providing an example in which two mobile stations have different

ranging codes and the ranging code collision does not occur), 122 (noting that "the probability of ranging code collision is decreased"), 128 (noting that "there is no handover ranging code collision, and the MSS can perform a fast handover").

As Petitioner explains, Song teaches that a handover ranging code ("non-contention reserved access identifier") uniquely identifies a mobile station when the handover ranging code is successfully received by the target base station, sending back a ranging response (RNG-RSP) message. Pet. 53, 54. As noted above, Song discloses that "[u]pon receiving a random handover ranging code through a random handover ranging slot from the MSS 1150, the base station 1100 transmits, to the MSS 1150, a ranging response (RNG-RSP) message including information *indicating the successful receipt of the handover ranging code*, for example an OFDMA symbol number, a subchannel, and *a ranging code*, in Step 1121." Ex. 1005 ¶ 125, Fig. 11 (emphasis added). If MSS 1150 does not receive a response from base station 1100 (e.g., in the situation where two mobile stations randomly select the same handover ranging code), MSS 1150 again randomly selects a handover ranging code and transmits the selected handover ranging code to base station 1100. *Id.* ¶ 124, Fig. 11, Step 1119.

Furthermore, Dr. Akl testifies that a person of ordinary skill in the art would have recognized that, "for the target base station to transmit back to the intended mobile station, the mobile station must be uniquely identified by the target base station." Ex. 1003 ¶¶ 176–178 (citing Ex. 1005 ¶¶ 56, 116, 125; Ex. 1011 ¶¶ 59–61). Dr. Akl also testifies that such an

artisan would have recognized that the base station can differentiate between the two mobile stations that have different ranging codes, because the mobile stations are uniquely identified by the particular ranging code. *Id.* Dr. Akl further explains that "when the handover ranging code is successfully received by the target base station, no other mobile stations are using the same handover ranging code," and "[b]ecause the handover ranging code is used by only one mobile station, the handover ranging code uniquely identifies the mobile station." Ex. 1015 ¶ 58.

Consistent with Dr. Akl's testimony, Dr. Lomp admits that if "two of Song's mobile stations coincidentally randomly selected different handover ranging codes and transmitted them to the base station," the "base station could then differentiate between those two mobile stations using the different handover ranging codes." Ex. 2006 ¶ 109. We credit Dr. Akl's testimony (Ex. 1003 ¶¶ 176–178; Ex. 1015 ¶ 58) as it is consistent with the prior art of record. *See, e.g.*, Ex. 1005 ¶¶ 56, 116, 125, Fig. 11; Ex. 1011 ¶¶ 59–61. Therefore, Song teaches "the non-contention reserved access identifier *uniquely identifies* the mobile station in the coverage area of the target base station," as recited in claims 15 and 30. Accordingly, Patent Owner's argument that Song's handover ranging code would not uniquely identify the mobile station is unavailing.

Based on the evidence in this entire trial record, we determine that Petitioner has established sufficiently that Song, in combination with other asserted prior art references, renders claims 15 and 30 obvious.

Claims 3, 4, 9, 10, 20, 21, and 25

Petitioner provides detailed explanations for claims 3, 4, 9, 10, 20, 21, and 25, citing to Dr. Akl's testimony for support. Pet. 38–41, 43–45, 75, 76; Ex. 1003 ¶¶ 116–125, 131–140, 239–241. Patent Owner does not proffer separate, specific arguments as to Petitioner's contentions regarding those claims. *See generally* PO Resp.

We have considered Petitioner's contentions and supporting evidence, and agree with Petitioner's explanations and Dr. Akl's unrebutted testimony regarding those limitations. We adopt Dr. Akl's analysis as our own.

For instance, claim 3 recites "wherein the non-contention reserved access identifier is from a second reserved set of access identifiers usable over the second random access channel in the coverage area of the target base station." Ex. 1001, 21:29–32. Claim 20 recites a similar limitation. *Id.* at 22:61–64. Claim 4 recites "wherein the first reserved set of access identifiers is different from the second reserved set of access identifiers." *Id.* at 21:33–35. Claim 21 recites a similar limitation. *Id.* at 22:65–67.

For these "second reserved set of access identifiers" limitations, Petitioner relies upon its analysis for claim 1 regarding "non-contention reserved access identifiers" and transmitting the identifier over a second random access channel, which we discussed above. Pet. 38–41. In addition, Petitioner explains that Song reserves some ranging codes for initial ranging (a first reserved set of access identifier) and some other ranging codes for handover ranging (a second reserved set of access identifiers)

that are different from initial ranging codes. *Id.* (citing Ex. 1005 ¶ 115, Fig. 10 (reproduced above)). The UCD and UL-MAP messages from the target base station are an indication of handover ranging codes. *Id.* (citing Ex. 1005 ¶¶ 121, 122). Petitioner further explains that, upon receiving the messages, Song's mobile station selects a handover ranging code and transmits it over a second random access channel in the coverage area of the target base station. *Id.;* Ex. 1005 ¶¶ 122, 123.

Based on the evidence in this entire trial record, we determine that Petitioner has established that Song, in combination with other asserted prior art references, teaches the aforementioned "second reserved set of access identifiers" limitations recited in claims 3, 4, 20, and 21, and renders these claims obvious.

Claims 9 and 25 each recite "adjusting at least one operating parameter of a transmission from the mobile station to the target base station results in *synchronizing* the mobile station to the target base station." Ex. 1001, 21:56–59, 23:16–19 (emphasis added).

For this "synchronizing" limitation, Petitioner relies upon its analysis for the "timing adjustment" limitation of claim 1, which we discussed above. Pet. 43. Specifically, Petitioner notes that Song discloses that target "base station 1100 transmits, to the MSS 1150, a ranging response (RNG-RSP) message" and "upon receiving the RNG-RSP message [from target base station 1100], the MSS 1150 *adjusts the time and the frequency offsets . . . using the information included in the RNG-RSP message*." Ex. 1005 ¶ 125 (emphases added). Song also teaches that "initial

ranging is performed to *synchronize* the base station with the SS [subscriber station], during which a time offset . . . between the SS and the base station are precisely adjusted." Ex. 1005 ¶ 33 (emphasis added).

Dr. Akl testifies that an ordinarily skilled artisan would have understood that adjusting the time offset as described in Song synchronizes the uplink transmissions from the mobile station to the target base station. Ex. 1003 ¶¶ 133, 134; Ex. 1008, 665. Dr. Akl also testifies that ranging with the target base station would result in synchronizing the mobile station to the target base station. Ex. 1003 ¶ 135.

Based on the evidence in this entire trial record, we determine that Petitioner has established that Song, in combination with other asserted prior art references, teaches the aforementioned "synchronizing" limitation recited in claims 9 and 25, and renders these claims obvious.

Claim 10 recites "transmitting a bandwidth request message to the target base station *subsequent* to adjusting the at least one operating parameter of a transmission from the mobile station to the target base station." Ex. 1001, 21:60–64 (emphasis added). For this "bandwidth" limitation, Petitioner relies upon its analysis for the "timing adjustment" limitation of claim 1, which we discussed above. Pet. 44. Specifically, Petitioner notes that Song discloses that target "base station 1100 transmits, to the MSS 1150, a ranging response (RNG-RSP) message" and "upon receiving the RNG-RSP message [from target base station 1100], the MSS 1150 *adjusts the time and the frequency offsets . . . using the information included in the RNG-RSP message*." Ex. 1005 ¶ 125

(emphases added). Petitioner further explains that Song discloses "transmitting a bandwidth request message to the target base station" because Song discloses that "bandwidth request ranging is performed by the SS having the time offset and the transmit power adjusted through the initial ranging, wherein the SS requests a bandwidth assignment in order to communicate with the base station." Pet. 44, 45 (quoting Ex. 1005 ¶ 37).

Dr. Akl testifies that handover ranging with the target base station is an initial ranging with the target base station. Ex. 1003 ¶¶ 139, 140. Dr. Akl also testifies that because Song performs the bandwidth request ranging *after* handover ranging, an ordinarily skilled artisan would have recognized that Song's bandwidth request ranging is performed "subsequent to adjusting the at least one operating parameter of a transmission from the mobile station to the target base station." *Id.*

Based on the evidence in this entire trial record, we determine that Petitioner has established that Song, in combination WiMAX, teaches the aforementioned "bandwidth" limitation recited in claim 10.

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 3, 4, 9, and 10 are unpatentable as obvious over the combination of Song and WiMAX, and that claims 20, 21, and 25 are unpatentable as obvious over the combination of the combination of Song, WiMAX, and Cleveland.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has established by a preponderance of the evidence that claims 1, 3, 4, 8–10, 12, and 15 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Song and WiMAX, and that claims 16, 17, 20, 21, 25, 27, and 30 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Song, WiMAX, and Cleveland.

IV. ORDER

Accordingly, it is

ORDERED that claims 1, 3, 4, 8–10, 12, 15–17, 20, 21, 25, 27, and 30 of the '320 patent are held unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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APPENDIX C

RELEVANT CONSTITUTIONAL AND STATUTORY PROVISIONS

1. Title 5 of the United States Code provides in relevant part as follows:

§ 7513. Cause and procedure

(a) Under regulations prescribed by the Office of Personnel Management, an agency may take an action covered by this subchapter against an employee only for such cause as will promote the efficiency of the service.

(b) An employee against whom an action is proposed is entitled to—

(1) at least 30 days' advance written notice, unless there is reasonable cause to believe the employee has committed a crime for which a sentence of imprisonment may be imposed, stating the specific reasons for the proposed action;

(2) a reasonable time, but not less than 7 days, to answer orally and in writing and to furnish affidavits and other documentary evidence in support of the answer;

(3) be represented by an attorney or other representative; and

(4) a written decision and the specific reasons therefor at the earliest practicable date.

(c) An agency may provide, by regulation, for a hearing which may be in lieu of or in addition to the opportunity to answer provided under subsection (b)(2) of this section.

(d) An employee against whom an action is taken under this section is entitled to appeal to the Merit Systems Protection Board under section 7701 of this title.

(e) Copies of the notice of proposed action, the answer of the employee when written, a summary thereof when made orally, the notice of decision and reasons therefor, and any order effecting an action covered by this subchapter, together with any supporting material, shall be maintained by the agency and shall be furnished to the Board upon its request and to the employee affected upon the employee's request.

2. Title 28 of the United States Code provides in relevant part as follows:

§ 1254. Courts of appeals; certiorari; certified questions

Cases in the courts of appeals may be reviewed by the Supreme Court by the following methods:

(1) By writ of certiorari granted upon the petition of any party to any civil or criminal case, before or after rendition of judgment or decree;

(2) By certification at any time by a court of appeals of any question of law in any civil or criminal case as to which instructions are desired, and upon such certification the Supreme Court may give binding instructions or require the entire record to be sent up for decision of the entire matter in controversy.

3. Title 35 of the United States Code provides in relevant part as follows:

§ 141. Appeal to Court of Appeals for the Federal Circuit

(a) Examinations.—An applicant who is dissatisfied with the final decision in an appeal to the Patent Trial and Appeal Board under section 134(a) may appeal the Board's decision to the United States Court of Appeals for the Federal Circuit. By filing such an appeal, the applicant waives his or her right to proceed under section 145.

(b) Reexaminations.—A patent owner who is dissatisfied with the final decision in an appeal of a reexamination to the Patent Trial and Appeal Board under section 134(b) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.

(c) Post-Grant and Inter Partes Reviews.—A party to an inter partes review or a post-grant review who is dissatisfied with the final written decision of the Patent Trial and Appeal Board under section 318(a) or 328(a) (as the case may be) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.

(d) Derivation Proceedings.—A party to a derivation proceeding who is dissatisfied with the final decision of the Patent Trial and Appeal Board in the proceeding may appeal the decision to the United States Court of Appeals for the Federal Circuit, but such appeal shall be dismissed if any adverse party to such derivation proceeding, within 20 days after the appellant has filed notice of appeal in accordance with

section 142, files notice with the Director that the party elects to have all further proceedings conducted as provided in section 146. If the appellant does not, within 30 days after the filing of such notice by the adverse party, file a civil action under section 146, the Board's decision shall govern the further proceedings in the case.

§ 311. Inter partes review

(a) In General.—Subject to the provisions of this chapter, a person who is not the owner of a patent may file with the Office a petition to institute an inter partes review of the patent. The Director shall establish, by regulation, fees to be paid by the person requesting the review, in such amounts as the Director determines to be reasonable, considering the aggregate costs of the review.

(b) Scope.—A petitioner in an inter partes review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications.

(c) Filing Deadline.—A petition for inter partes review shall be filed after the later of either—

(1) the date that is 9 months after the grant of a patent; or

(2) if a post-grant review is instituted under chapter 32, the date of the termination of such post-grant review.

§ 319. Appeal

A party dissatisfied with the final written decision of the Patent Trial and Appeal Board under section 318(a) may appeal the decision pursuant to

sections 141 through 144. Any party to the inter partes review shall have the right to be a party to the appeal.