

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NOKIA OF AMERICA CORPORATION, ERICSSON INC.,
AND T-MOBILE USA, INC.,
Petitioner,

v.

GENERAL ACCESS SOLUTIONS, LTD.,
Patent Owner.

IPR2023-01416
Patent 6,947,477 B2

Before KEN B. BARRETT, BARBARA A. PARVIS, and
TERRENCE W. McMILLIN, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Nokia of America Corporation, Ericsson Inc., and T-Mobile USA, Inc. (collectively, “Petitioner”)¹ filed a Petition requesting *inter partes* review of U.S. Patent No. 6,947,477 B2 (“the ’477 patent,” Ex. 1001). Paper 1 (“Pet.”). The Petition challenges the patentability of claims 1–20 of the ’477 patent. We instituted an *inter partes* review of all challenged claims on all proposed grounds of unpatentability. Paper 12. In the Institution Decision, we determined that Petitioner had demonstrated a reasonable likelihood of prevailing as to the independent method claim, but not as to the independent apparatus claim. *See, e.g.*, Paper 12, 16.

General Access Solutions, Ltd. (“Patent Owner”)² filed a Response to the Petition. Paper 21 (“PO Resp.”). Petitioner filed a Reply (Paper 24, “Pet. Reply”) and Patent Owner filed a Sur-reply (Paper 25, “PO Sur-reply”).

An oral hearing was held on January 14, 2025, and a transcript of the hearing is included in the record. Paper 33 (“Tr.”).

On January 13, 2025, the day before the oral hearing, Patent Owner filed with the Office a statutory disclaimer disclaiming method claims 16, 17, 19, and 20. *See* Ex. 2007; *see also* Tr. 33, 21:1–12 (Patent Owner’s counsel informing the Board that the disclaimer had been filed in the USPTO Patent Center, and Petitioner’s counsel having no objection to the filing of the disclaimer as an exhibit in this *inter partes* review); Tr. 34:19

¹ Petitioner identifies Nokia of America Corporation, Ericsson Inc., and T-Mobile USA, Inc. as real parties in interest. Pet. 72.

² Patent Owner identifies General Access Solutions, Ltd. as the real party in interest. Paper 6, 1.

(Patent Owner’s counsel stating, “General Access has disclaimed method Claims 16, 17, 19, and 20.”). We treat disclaimed claims as if they never existed. *See Facebook, Inc. v. SKKY, LLC*, CBM2016-00091, Paper 12 at 8 (PTAB Sept. 28, 2017) (expanded panel) (precedential) (“The Federal Circuit has held consistently that claims disclaimed under § 253(a) should be treated as though they never existed.”) (citing, *inter alia*, *Vectra Fitness, Inc. v. TWNK Corp.*, 162 F.3d 1379, 1383 (Fed. Cir. 1998) (“This court has interpreted the term ‘considered as part of the original patent’ in section 253 to mean that the patent is treated as though the disclaimed claims never existed.”); *Guinn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996) (“A statutory disclaimer under 35 U.S.C. § 253 has the effect of canceling the claims from the patent and the patent is viewed as though the disclaimed claims had never existed in the patent.”)). Accordingly, the remaining claims challenged in this proceeding are apparatus claims 1–15 and method claim 18.

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, we determine that Petitioner has *not* shown by a preponderance of the evidence that claims 1–15 and 18 of the ’477 patent are unpatentable.

B. Related Proceedings

Both parties identify, as a matter involving or related to the ’477 patent, *General Access Solutions, Ltd. v. T-Mobile USA, Inc. et al.*, No. 2:23-cv-00158-JRG (E.D. Tex.). Pet. 72; Paper 6, 1.

Petitioner also indicates that it filed a request for *ex parte* reexamination of the ’477 patent, Reexamination Control No. 90/019,869. Paper 34, 2.

C. The '477 Patent

The '477 patent is titled “Apparatus and Method for Creating Signal and Profiles at a Receiving Station.” Ex. 1001, code (54). The '477 patent “relates generally to a manner by which to operate upon burst data signals received at a receiving station, such as a base station of a fixed wireless access (FWA) communication system.” *Id.* at 3:20–23. An apparatus and an associated method of the '477 patent relate to creating a profile representative of expected signal characteristics of a burst data signal and of expected characteristics of the channel upon which the burst data signal is communicated, in which the profile “is used at the receiving station to facilitate processing of the burst data signals received at the receiving station.” *Id.* at 3:23–30.

The '477 patent explains that base stations of a fixed wireless broadband system transmit forward channel (downstream) signals in directed beams to fixed location antennas attached to the residences or offices of subscribers and also receive reverse channel (upstream) signals transmitted by the broadband access equipment of the subscriber. *Id.* at 5:24–30. According to the '477 patent, there was a need for broadband access equipment that could be readily and inexpensively deployed in the large domestic and international markets and a need “for an apparatus to compensate for distortion introduced upon data signals transmitted on a wireless communication channel.” *Id.* at 5:44–50. Also, according to the '477 patent, “the base stations of a FWA system must be able to quickly and accurately to operate upon data bursts received from a potentially large number of subscribers,” and “[a]ny manner by which to facilitate an increase in speed and accuracy by which the data bursts can be operated upon

by the base stations, or other infrastructure, would therefore be advantageous.” *Id.* at 5:44–56.

The ’477 patent states that it provides an apparatus and an associated method to operate upon bursts data signals received at a receiving station, in which “[c]haracteristics of data bursts and the channels by which the data bursts are received are stored in memory as signal and channel profiles at the receiving station.” *Id.* at 5:60–6:3. A burst of data is provided to a demodulator and a profile is associated with the channel upon which the burst is communicated to the base station and utilized in the demodulation of the burst of data. *Id.* at 6:19–22. “As the burst of data is demodulated, the values of the profile associated with the channel upon which the data burst is communicated are updated as appropriate.” *Id.* at 6:22–29. According to the ’477 patent, uplink capacity of data signals sent by the subscriber stations to the base station is improved and “better compensation is made to counteract the effects of distortion of the data signals communicated during operation of a communication system.” *Id.* at 6:35–40. The ’477 patent states that “[e]lements of the profile created and stored during operation . . . are selected, e.g., to be values pertinent to the implementation of the communication system.” *Id.* at 6:42–45.

Figure 1 is reproduced below.

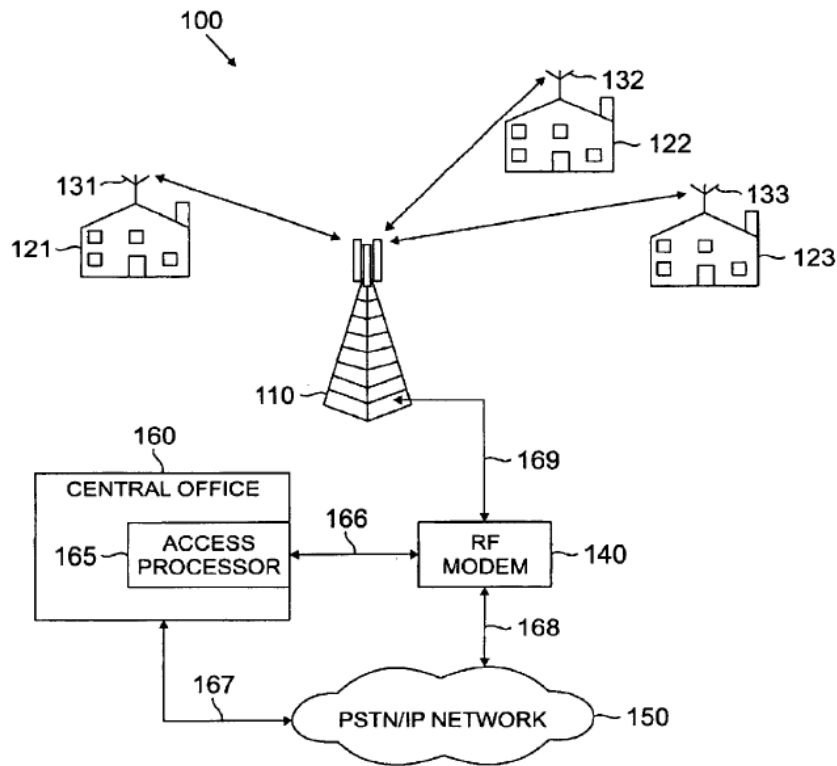


FIG. 1

Figure 1 illustrates “a functional representation [of] an exemplary fixed wireless access network.” *Id.* at 7:28–30. Fixed wireless access network 100 includes transceiver base station 110 that transmits forward channel (downstream) broadband signals to subscriber premises 121–123 via respective antennas 131–133, and receives reverse channel (upstream) broadband signals from the subscriber premises. *Id.* at 7:58–8:2. The ’477 patent discloses that, for the downlink, “each subscriber receives only the base station signal,” but for the uplink, the base station receives a burst of data on a demand basis from the subscribers and the base station has to process each channel.” *Id.* at 9:47–50.

Figure 3 is reproduced below.

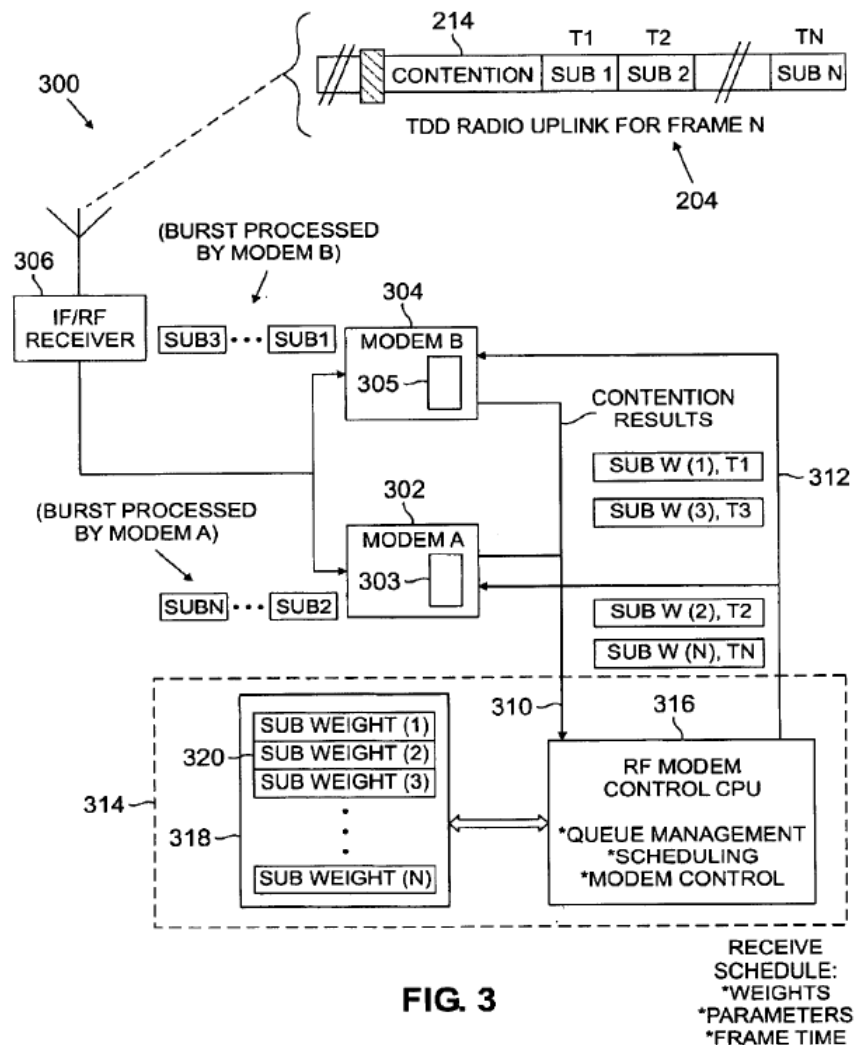


Figure 3 illustrates “a functional block diagram of a portion of an embodiment [of the ’477 patent] comprising two modems and a controller.” *Id.* at 7:34–36. Shown, at the top of Figure 3, is uplink portion 204 of a time division duplex (TDD) data frame, with bursts of data sub1, sub2 . . . subN. *See id.* at 9:26–31, 10:7–9. Also, shown is a system having modem 302 and modem 304 that are “selectively coupled to receive uplink signals sent by different ones of subscriber stations to the base station.” *Id.* at 9:64–10:2. IF/RF (intermediate frequency/radio frequency) receive circuitry 306 of the base station passes the uplink signals to the modems and “is operable to

down-convert in frequency uplink signals received from receive circuitry 304.” *Id.* at 10:2–7. “Thereafter, the down-converted signals, bursts sub3 . . . sub1 and bursts subN . . . sub2 are operated upon by modems 304 and 302[,] respectively.” *Id.* at 10:5–9. Modems 302 and 304 are coupled to controller 316 “via lines 310, for receiving contention results, and 312 for passing parameters, frame times and weight values for the modems to apply to the received signals.” *Id.* at 10:9–13. “Controller 314 includes control CPU 316 and memory device 318.” *Id.* at 10:13–14. Profiles are created and maintained by controller 314 in memory device 318. *Id.* at 10:17–18. “[T]he control CPU is operable to form a profile parameter determiner and updater, and the memory . . . forms a profile storage device.” *Id.* at 11:10–13.

Modems 302 and 304 include equalizers 303 and 305, respectively, which perform equalization functions. *Id.* at 10:25–27. The ’477 patent discloses:

The profiles associated with the various communication channels stored at memory device 318 include weighting values 320 by which to weight equalizers 303 and 305. Values 320 are utilized to weight equalizers 303 or 305, as appropriate, when data signals sent to the base station on the corresponding channel are to be operated upon by the selected modem. As channel conditions change, changes to values 318 are calculated and stored. Other values of the profiles, while not separately shown, are analogously stored at memory device 318.

Because changes in the channel condition typically vary at a rate much slower than the rate of data transmission of the uplink data signals, the update rates at which the values of the

profiles need to be applied to the modems are a mere fraction of the data transmission rates.

Id. at 10:27–42. “Updates are made to the profile as appropriate . . . and the updated profile is stored at the memory device of the controller.” *Id.*

at 11:14–16. “When subsequent bursts generated by the same subscriber station are received at the base station and applied to the modem, the updated profile is retrieved and utilized when the subsequent burst of data is to be operated upon by the modem.” *Id.* at 11:16–20. “Compensation for distortion introduced on the uplink data signal is improved because the profile was updated as the data signal’s channel conditions changed.” *Id.* at 11:20–23.

In an exemplary method, a subscriber station transmits a burst of a burst data signal to the base station and the burst is applied to an RF modem located at the base station. *Id.* at 11:37–50. If the burst is an initial burst communicated during a contention period, “operations are performed upon the burst to determine the parameters associated with the burst as well as determinations of the channel characteristics of the channel upon which the burst was transmitted.” *Id.* at 11:51–56. The parameters can include signal-related parameters such as “the amount of forward error correction (FEC) of the burst, change in frequency of the burst, changes in time of the burst, changes in power levels of the burst, etc.” and channel-related parameters such as “values of equalization weighting, antenna parameters, either at the subscriber station or at the base station, etc.” *Id.* at 11:56–64.

D. Illustrative Claims

Of the challenged claims of the ’477 patent, claims 1 and 16 are independent claims. The remaining challenged claims depend directly or

indirectly from claim 1 or claim 16. Claims 1 and 16, reproduced below with bracketed annotations³ inserted, are illustrative.

1. [Pre] Profile-creating apparatus for creating at least a first profile associated with transmission upon at least a first channel of at least a first burst-data signal transmitted in bursts to a receiving station, said profile-creating apparatus comprising:

[1.A] a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the receiving station, [1.B] said profile parameter determiner for determining a value of at least one signal-related parameter and at least one channel-related parameter, wherein the signal-related and channel-related parameters are collectively representative of communication of the first burst data signal over the first channel to the receiving station; and

[1.C] a profile parameter storage device coupled to said profile parameter determiner, said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter determined [sic] by said profile parameter determiner, [1.D] the values stored at said profile parameter storage device to be used to facilitate receive operations performed at the receiving station on subsequent bursts of the first burst data signal.

16. [Pre] A method for creating at least a first profile associated with transmission upon at least a first channel of at least a first burst data signal in bursts to a receiving station, said method comprising:

[16.A] responsive to reception at the receiving station of an initial burst of the first burst data signal transmitted upon the first channel, determining a value of at least one signal-related parameter and at least one channel-related parameter, wherein the signal-related and channel-related parameters are

³ We utilize Petitioner's annotations for claims 1 and 16 but have retained the paragraph formatting from the issued patent.

collectively representative of communication of the first burst data signal over the first channel to the receiving station;

[16.B] storing values representative of the at least one signal-related parameter and the at least one channel-related parameter determined during said operation of determining; and [16.C] using the values stored during said operation of storing to facilitate receive operations performed at the receiving station upon at least one subsequent burst of the first burst data signal.

Ex. 1001, 12:63–13:18, 14:22–42.

E. Evidence

Petitioner relies on the following references:

Name	Reference	Exhibit No.
Genossar	US 6,643,321 B1, filed Sept. 30, 1998, issued Nov. 4, 2003	1005
WiMAX	<i>Air Interface for Fixed Broadband Wireless Access Systems</i> , “IEEE 802.16.1-00/01r4, September 2000” ⁴	1006
Barratt ’470	US 5,909,470; issued June 1, 1999	1007
Barratt ’490	US 5,592,490; issued Jan. 7, 1997	1008
PHS	Personal Handy Phone System ARIB Standard Version 2, Association of Radio Industries and Businesses (ARIB), December 26, 1995	1009

Petitioner also relies on the declarations of Daniel van der Weide, Ph.D. (Exs. 1003, 1035, 1039) in support of its arguments, and Patent Owner relies on the declaration of Vijay K. Madiseti, Ph.D. (Ex. 2003) in support of its arguments. The parties also rely on other exhibits as discussed below.

⁴ We quote here, for identification purposes only, the information in the header of the first page of the WiMAX exhibit. Whether and when the document was publicly accessible are disputed issues. *See, e.g.*, PO Resp. 31–38.

F. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims⁵ are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §⁶	Reference(s)/Basis
1, 3–5, 8, 9, 13, 15	102	Genossar
2, 10–12, 14, 18	103	Genossar, WiMAX
1, 3–6, 8–10, 13, 15	102	Barratt ’470
7, 11, 12	103	Barratt ’470, Barratt ’490
2, 14, 18	103	Barratt ’470, PHS

II. ANALYSIS

A. Principles of Law

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must establish by a preponderance of the evidence that the challenged claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628,

⁵ The originally-challenged claims that have been disclaimed are omitted from the table and from the discussions below of the individual grounds. See Ex. 2007 (disclaiming claims 16, 17, 19, and 20).

⁶ The application that issued as the ’477 patent was filed before the effective date of the Leahy Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), and we apply the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

631 (Fed. Cir. 1987); *see also Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) (to anticipate a patent claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation”). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Whether a reference anticipates is assessed from the perspective of one of ordinary skill in the art. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368–69 (Fed. Cir. 2003) (“‘[T]he dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference’s] teaching’ that every claim element was disclosed in that single reference.” (second and third alterations in original) (quoting *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991))).

Additionally, “[u]nder the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999); *see In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349–50 (Fed. Cir. 2002).

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 skill in the art; and (4) if present, any objective evidence of obviousness or non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. The 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 contends that:

A POSITA [(person of ordinary skill in the art)] at the time of the alleged invention of the '477 Patent would have had at least a bachelor's degree in computer science, electrical or computer engineering, or a related field, and at least two years of work or research experience in digital communications systems, such as wireless communications systems and networks, or equivalent, or a master's degree in electrical engineering, computer engineering, computer science, or a similar field. Ex. 1003, ¶34. Relevant working experience would include experience with telecommunications and networking, radio-access networking, and/or service

provisioning in wireless networks. *Id.* More education can supplement practical experience and vice-versa. *Id.*

Pet. 5. Patent Owner states that, “[f]or purposes of this Response only, Patent Owner does not dispute the Petitioners’ definition of a person of ordinary skill in the art.” PO Resp. 4 (citing Pet. 5).

Petitioner’s definition is consistent with the level of ordinary skill reflected in the prior art references of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (recognizing that the prior art itself may reflect an appropriate level of skill in the art). For purposes of this decision, we apply Petitioner’s definition of the person of ordinary skill in the art.

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). “[W]hile extrinsic evidence can shed useful light on the relevant art, . . . it is less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (internal quotation marks omitted).

The Petition states that, “[u]nless otherwise specified, for purposes of this Petition, the terms should receive their respective plain and ordinary meaning as understood by a POSITA under *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)).” Pet. 6. Patent Owner’s Response states that “Patent Owner agrees with Petitioners that, for purposes of this Response only, all terms of the ’477 patent have their plain and ordinary meaning.” PO Resp. 10. The parties discuss their respective views of the meaning of certain terms. *See, e.g.*, PO Resp. 10–14; Pet. Reply 3–13, 19; PO Sur-reply 5–13.

We address here certain claim construction issues pertinent to dispositive issues in this *inter partes* review. We also briefly address below, in the context of Ground 5, an issue involving antecedent basis and pertaining to independent method claim 16 and its dependent claim 18. *See infra* Section II.H. For purposes of this decision, we determine that no other claim terms require express construction.⁷

1. The Distinction Between the Apparatus Claims and the Method Claims

The ’477 patent contains both apparatus claims, with claim 1 being independent, and method claims, with claim 16 being independent. *See* Ex. 1001, 12:63–14:64. On the eve of the oral argument, Patent Owner disclaimed most, but not all, of the method claims, leaving dependent

⁷ The resolution of the dispositive issues in this case do not require us to reach the parties’ arguments regarding whether the claimed “channel-related parameter,” when it is an antenna parameter, is limited to “only antenna combining parameters when antenna diversity and/or beamforming is utilized.” Pet. Reply 12–13; *see also* PO Resp. 47–48.

method claim 18 as the only method claim at issue in this *inter partes* review. *See* Ex. 2007.

At times during this proceeding, the parties have treated the claims at a high conceptual level rather than addressing adequately the nuances of the different types of claims. Petitioner tends to implicitly, and sometimes explicitly, characterize the claimed “invention” as a method. For example, Petitioner argued at oral argument:

[T]he invention that’s claimed in the ’477 patent is really about what’s described in the method claims. The structure is really just—there’s nothing novel about the claim[ed] structures. They’re basically the way you would do this if you were to implement the process that’s described in the method claims.

Tr. 5:22–26; *see also, e.g.*, Paper 10 at 1–2 (Petitioner arguing—in response to Patent Owner’s argument that the prior art lacks claimed structure of an *apparatus* claim—“like the ’477 Patent, Genossar teaches the general *process* of determining and storing parameters for use in processing subsequently received signals.” (emphasis added)). As will become clear, a key issue for the anticipation grounds is not whether certain structural components, such as determiners and memory devices, are novel, but whether Petitioner has shown that the prior art discloses the claimed structural relationships between such components. *See Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (“The requirement that the prior art elements themselves be ‘arranged as in the claim’ means that claims cannot be ‘treated . . . as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning.’” (quoting *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed.Cir.1984)) (alteration in original)).

Patent Owner, on the other hand, focuses primarily on the apparatus claims and the particular structural limitations recited therein. For example, prior to filing its disclaimer, Patent Owner asserted that the Petition fails to prove that the apparatus claims are unpatentable and argued that, for that reason, the method claims also have not been shown to be unpatentable. *See, e.g.*, PO Resp. 23 (Patent Owner arguing that “Petitioners incorporate the failings of its [apparatus] claim 1 challenge into [method] claim 16” and, “[f]or this reason, Petitioners’ Ground 1 challenge must fail as to claim 16 and its dependent claims as well.”). As we discuss below, however, Patent Owner did separately argue dependent method claim 18 challenging Petitioner’s reliance on the WiMAX reference for that claim and challenging Petitioner’s mapping of the parameter values for that claim in Ground 5 (involving Barratt ’470 and PHS).

We must determine whether Petitioner has met its burden by analyzing each challenged claim individually based on its specific language rather than, for example, looking to whether a high-level concept or process is disclosed or suggested in the prior art. *See SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (“It is the *claims* that measure the invention.”); *cf.* Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990) (“The U.S. is strictly an examination country and the main purpose of the examination, to which every application is subjected, is to try to make sure that what each claim defines is patentable. To coin a phrase, the name of the game is the claim.”), *cited with approval in In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998).

Independent claim 1 recites a profile-creating apparatus comprising two components: 1) a profile parameter determiner, and 2) a profile parameter storage device. Ex. 1001, 12:62–13:18. The claim recites that the storage device is “coupled to” the determiner, and that the storage device is “for storing values [determined by the determiner] representative of the at least one signal-related parameter and the at least one channel-related parameter.” *Id.* at 13:10–14.

Independent method claim 16⁸ is broader in certain respects relative to independent apparatus claim 1. For example, method claim 16 calls for determining the values of the two parameters and storing them, but does not recite structures for performing those steps or a structural relationship between respective structures for determining and storing values, and does not specify where the values are stored. *See id.* at 14:22–42.

With that context, we turn to the parties’ discussion regarding certain claim terms.

2. “*a profile parameter storage device coupled to said profile parameter determiner*”

Independent apparatus claim 1, as mentioned above, calls for a “profile-creating apparatus comprising” two components: “a profile parameter determiner” (limitation 1.A) and “a profile parameter storage device” (limitation 1.C). Ex. 1001, 12:63–67, 13:1, 13:11. The “storage device” limitation 1.C recites:

a profile parameter storage device *coupled to* said profile parameter determiner, said profile parameter storage device for

⁸ Although independent method claim 16 has been disclaimed, its limitations are incorporated into dependent claim 18, the patentability of which remains an issue in this proceeding. *See* 35 USC § 112 ¶ 4 (the pre-AIA version of § 112(d)).

storing values representative of the at least one signal-related parameter and the at least one channel-related parameter determined [sic] by said profile parameter determiner.

Id. at 13:11–16 (emphasis added). The parties’ dispute pertains to the meaning of “coupled to.”

As discussed below, the Petition’s anticipation grounds, for this storage device limitation 1.C, lack any contention using the phrase “coupled to,” and the Petition asserts that the each of references’ purported “determiner” both determines and stores the values of the profile parameters. *See* Pet. 17–18 (asserting that “Genossar further discloses that the receive portion 28 (i.e., ‘profile parameter determiner’) determines and stores certain parameter values”), 20, 42 (asserting, for the Barratt ’470 ground, “[e]ach DSP 117 [mapped to the determiner] maintains values associated with the signals received during that timeslot”), 47–48.

Patent Owner construes the phrase “a profile parameter storage device coupled to said profile parameter determiner” as requiring that the “profile parameter storage device” and the “profile parameter determiner” be two different and distinct components. *See* PO Resp. 12 (“when the ’477 patent states that ‘[a] profile parameter storage device is coupled to the profile parameter determiner,’ a POSA would naturally understand that such ‘coupling’ can only take place between two separate and distinct components.” (alteration in original)).

Petitioner contends that “[t]he plain and ordinary meaning of the term ‘coupled to’ must include items joined or connected in any way.” Pet. Reply 3. Petitioner further contends that “the term ‘coupled to’ is not limited to a specific, direct, physical relationship, but instead represents a functional relationship,” and that “[a] POSITA would understand that

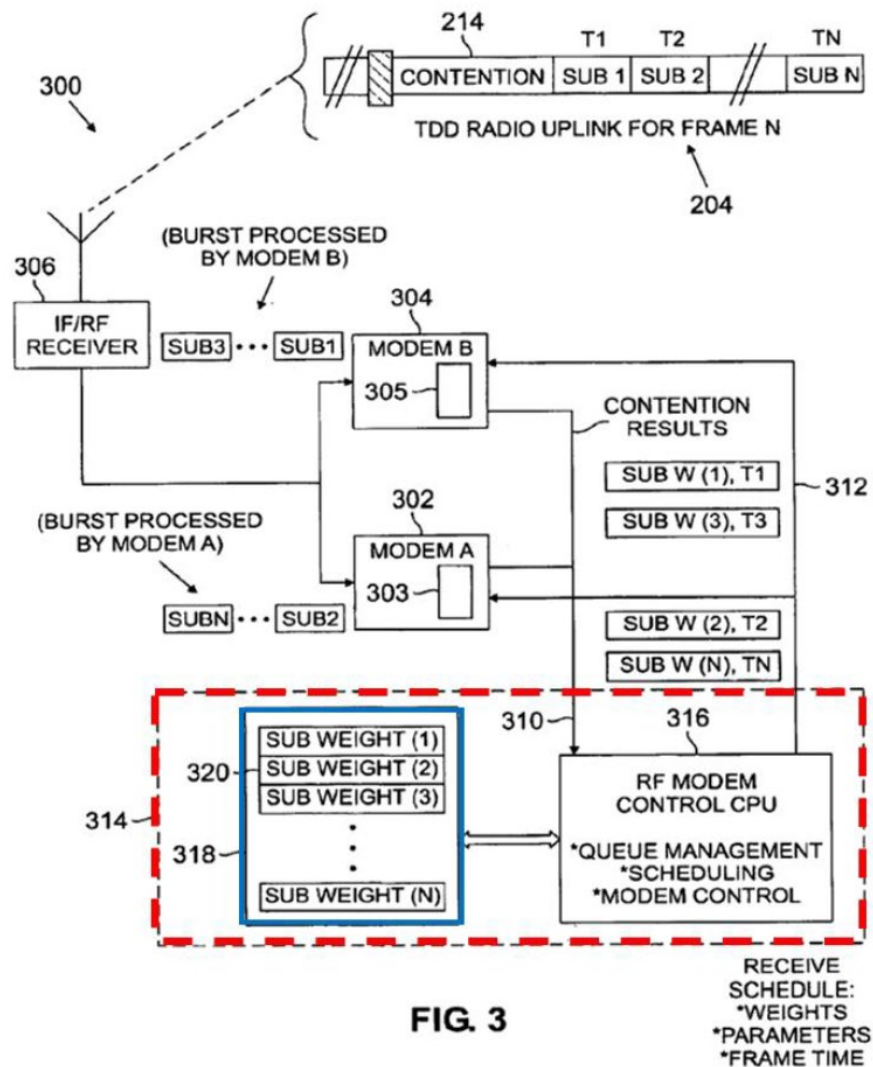
joining or connecting components in any way would include components that are joined within each other.” *Id.* at 5 (citing Ex. 1039 ¶¶ 12, 15). As to the latter contention, Petitioner asserts that a storage device that is a subcomponent of a determiner is a situation where components are joined within each other and therefore satisfies the claim requirement of a storage device coupled to a determiner. *See id.* at 5–10; *see also id.* at 10 (“Under the proper construction of ‘coupled to’, i.e., joined or connected to in any way, the profile parameter storage device may be joined within the profile parameter determiner.”). Petitioner impliedly argues that, under its proposed construction, if a reference discloses the steps of determining and storing of two parameter values, there is no structural arrangement that would not meet the “coupled to” limitation of the apparatus claims. *See* Pet. Reply 15–16 (Petitioner replying to Patent Owner’s argument that the Petition failed to present a contention regarding “coupled to” in the Barratt ’470 anticipation ground).

We begin with the intrinsic evidence, namely the claim language and the Specification.⁹ *See DePuy Spine, Inc.*, 469 F.3d at 1014. Apparatus claim 1 recites a “profile-creating apparatus comprising: a profile parameter determiner . . . and; a profile parameter storage device coupled to said profile parameter determiner.” Ex. 1001, 12:66–13:1, 13:10–12. Thus, the determiner and storage device are separately listed limitations. “[T]here is a ‘presumption’ that separately listed claim limitations may indicate separate and distinct physical structure, but that presumption may always be rebutted in the context of a particular patent.” *Google LLC v. EcoFactor, Inc.*, 92

⁹ The parties do not direct our attention to any portion of the prosecution history relevant to the issues before us.

F.4th 1049, 1058 (Fed. Cir. 2024). For example, the claim language and the Specification may confirm that the separately listed claim limitations include separate and distinct structures, or may rebut the presumption. *See id.* (citing *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010)).

We determine that the Specification is consistent with the storage device and determiner being separate and distinct physical structures. Reproduced below is Petitioner's annotated version of Figure 3 of the '477 patent.



Pet. Reply 7. Shown above is Figure 3, which is a functional block diagram of an embodiment of the '477 patent, with Petitioner's annotations in the form of a red dashed box for controller 314 and a solid blue box for memory device 318. Ex. 1001, 7:34–36, 10:13–18. The Specification states:

The controller 314 is here again shown to include the memory device 318 and the control CPU 316. Here, the control CPU is operable to form a profile parameter determiner and updater, and the memory here forms a profile storage device.

Id. at 11:9–13; *see also id.* at 10:13–14 (“Controller 314 includes control CPU 316 and memory device 318.”). The depiction, as shown in the figure above, of the double headed arrow between memory device 318 and control CPU 316 is consistent with the recitation of a “coupled to” relationship. *See, e.g.*, Tr. 12:4–9 (Petitioner's counsel at the hearing: “[T]he functional split between those two things is basically saying I've got some processing elements, and I've got memory, and those are part of my controller, and they are functionally coupled to one another or coupled to one another in any way. And there will be some physical connection here.”).

As mentioned, Petitioner contends that each of the prior art references' purported “determiner” both determines and stores parameter values. *See* Pet. 17–18, 42. In reply to Patent Owner's argument that Petitioner has failed to allege that the prior art discloses the claim's requirement of a storage device coupled to a determiner, *see, e.g.*, PO Resp. 16, Petitioner argues that “[t]he ‘coupled to’ language does not preclude an arrangement in which the profile parameter storage device is joined within the profile parameter determiner,” Pet. Reply 10. Petitioner asserts that the '477 patent's Figure 3 (as annotated by Petitioner and reproduced above) supports its position. *See id.* at 5–10. Petitioner acknowledges that the Specification describes the control CPU as the

determiner, but argues that “it is the overall controller 314 of Figure 3 which performs the *claimed steps* of receiving and determining.” *Id.* at 8 (emphasis added).¹⁰ According to Petitioner, “[t]he controller 314 satisfies the claimed profile parameter determiner,” and, because memory device 318 is a subcomponent of the controller, “[a]s shown in Figure 3, memory device 318 . . . is joined to controller 314.” *Id.* at 6–7 (citing, *inter alia*, Ex. 1039 (Dr. van der Weide’s supplemental declaration) ¶¶ 16–17); *see also id.* at 7–8 (Petitioner arguing that the Specification discloses an embodiment where a controller or base station CPU contains a component for controlling demodulation and another component for storing profiles (citing Ex. 1001, 6:50–62; Ex. 1039 ¶¶ 18–19)).

We do not agree that the Specification supports Petitioner’s position. Although Figure 3 depicts controller 314 as including, as a subcomponent, memory device 318 (described as the profile storage device), it also depicts the controller having, as a subcomponent, control CPU 316, which the Specification describes as a determiner. *See id.* at 11:9–13. The “coupled to” claim language refers to the relationship between those two subcomponents—the storage device and the determiner—rather than, as Petitioner urges, a subcomponent and the overall controller component.

Additionally, Petitioner’s proposed construction, that a device can be said to be “coupled to” a subcomponent of the device, is an unnatural reading of the phrase “coupled to,” and is not consistent with the intrinsic evidence in this case. *See Cutsforth, Inc. v. Motivepower, Inc.*, 643 F. App’x 1008 (Fed. Cir. 2016) (non-precedential). In *Cutsforth*, the claim recited “a

¹⁰ We note that Petitioner incorrectly refers to claimed method steps in addressing the “coupled to” limitation of an apparatus claim.

brush catch coupled to the beam.” *Id.* at 1012. The Court reversed the Board’s determination that “a ‘brush catch’ may be a sub-component of the ‘beam’ and still be considered to be ‘coupled to the beam.’” *Id.* The Court stated:

Cutsforth argues that the Board’s interpretation renders the phrase “coupled to” meaningless. It argues that the Board expanded the meaning of the term “coupled to” beyond its plain meaning without any supporting evidence. We agree with Cutsforth that the claims-at-issue require a “brush catch” to be a physical structure that is separate from, and not a sub-component of, the claimed “beam.” It goes beyond the plain meaning of “coupled” to say that a sub-component (e.g., an engine in a car) is “coupled to” the component as a whole (e.g., the car). No evidence shows that the inventors intended to deviate from the plain meaning of “coupled to.”

Id. at 1012–13; *cf. Garmin Int’l, Inc. v. Cuozzo Speed Techs. LLC*, IPR2012-00001, Paper 59 at 9 (PTAB Nov. 13, 2013) (“For a speedometer to be ‘integrally attached’ to a colored display, there must be a speedometer and a colored display that are separately identifiable from each other, or else ‘attached’ effectively would be read out of the claim. . . . It would be illogical to regard one unit as being ‘attached’ to itself.”). The same reasoning and conclusions of *Cutsforth* apply here. *See also* Ex. 2005, 16 (the District Court, in the related litigation, stating: “Assuming item 56 [in Genossar] is the claimed ‘profile parameter storage device,’ [Patent Owner] GAS explained that, because item 56 forms part of the receive portion 28, item 56 cannot be ‘coupled’ to the alleged determiner. . . . This makes sense, as otherwise the ‘receive portion’ would have been ‘coupled to’ itself.”).

We conclude that the claim phrase “a profile parameter storage device coupled to said profile parameter determiner” does not encompass a purported determiner storing parameter values within itself.

Petitioner also asserts:

The phrase “coupled to” occurs twice in claim 1, first in “a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal” (Ex. 1001, Claim 1.A) and then again in “a profile parameter storage device coupled to said profile parameter determiner.” While *the second use of the term “coupled to” references two components*, the first describes a functional relationship, the profile parameter determine is “coupled to receive,” or coupled for the purpose of receiving. This illustrates that the term “coupled to” is not limited to a specific, direct, physical relationship, but instead represents a functional relationship (Ex. 1039 at ¶ 12). The specification similarly uses the term “coupled” to include components that are explicitly functionally coupled, noting that “[m]odem 302 and modem 304 are selectively coupled to receive uplink signals” (Ex. 1001 at 9:67–10:1) and that “[t]he modems are shown to be functionally coupled to controller 316 via lines 310, for receiving contention results, and 312 for passing parameters, frame times and weight values for the modems to apply to the received signals” (Ex. 1001 at 10:9–13). A POSITA would understand that coupling two components together describes a functional relationship that includes all components “joined or connected to in any way” (Ex. 1039 at ¶¶ 13–14).

Pet. Reply 4–5 (emphasis added; alterations in original).

First, if, as Petitioner asserts, the claim recites “coupled to” in two different ways. that suggests that the limitations should be construed differently, not that the first purportedly “functional” way should be read onto the second occurrence or that the admittedly-present recitation of two coupled-together components should be ignored. Even if the first occurrence is described in the Specification as a “functional” coupling, that

does not convert the second occurrence's explicit recitation of one component "coupled to" another to merely a "functional" relationship.

Second, the first occurrence of "coupled to" also is structural; the claim simply does not specify explicitly the component to which the determiner is coupled. *See* Ex. 1001, 13:1–4 (limitation 1.A reciting, "a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the receiving station"). The embodiment of the '477 patent's Figure 3 depicts modems "functionally coupled to controller 316 [sic, control CPU 316, identified as a determiner] via lines 310 . . . and 312," *id.* at 10:8–10, and the modems, in turn, connected to IF/RF receiver 306. Petitioner concedes that these are physical components and that they are "functionally coupled" via physical lines. *See* Tr. 9:15–10:3.

Third, to the extent that Petitioner contends that a challenger of an apparatus claim need only show that the functions of determining and storing occur in a prior art reference, we disagree. *See, e.g.,* Pet. Reply 14 (Petitioner arguing that a references' discussion of transferring values "to the stored memory" shows that several listed memory components "are functionally coupled to the determining device which generates the relevant values."). To show that the subject apparatus limitation is anticipated, Petitioner must demonstrate by a preponderance of the evidence that the reference discloses, *inter alia*, a determiner structure, a storage device structure, that the storage device is coupled to the determiner, and that the storage device structure is for storing both types of recited parameter values. In this case, a disclosure of the functions of determining and storing is inadequate to demonstrate a disclosure of the specific structural limitations

recited in the apparatus claims. It is not enough to assert that parameter values are determined, possibly by different processors, and are stored someplace, with the two types of parameters possibly stored in different storage devices or outside of the claimed profile-creating apparatus.

Relatedly, to the extent that Petitioner argues that “coupled to” means “joined or connected in any way” such that every possible arrangement of a determiner and a storage device satisfies the “coupled to” limitation, we disagree.¹¹ *See, e.g.*, Pet. Reply 15–16 (Petitioner, after Patent Owner pointed out the lack of an allegation of “coupled to” in the Petition, arguing that “[t]here is no arrangement of the profile parameter storage device of Barratt ’470 and the profile parameter determiner of Barratt ’470 that would not meet the claim limitation of joined or connected in any way, . . .”). Petitioner’s implied position—that the disclosure of a method involving determining and storing of parameter values inherently discloses the claimed structure—reads out of the claim the structural arrangement of two devices “coupled to” each other. *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”).

¹¹ Petitioner’s basis for the assertion that “[t]he plain and ordinary meaning of the term ‘coupled to’ must include items joined or connected in any way,” is that “Patent Owner agreed to this construction before the District Court. Pet. Reply 3–4; *see id.* at 4 (Petitioner’s conclusory argument that “[t]his construction is the plain and ordinary meaning to a POSITA” in light of the intrinsic evidence and the understanding of one skilled in the art); *see also* Ex. 1039 ¶¶ 10–11 (Dr. van der Weide’s conclusory statement of agreement as to the plain and ordinary meaning). Patent Owner’s arguments in this forum clearly indicate that Patent Owner does not agree with Petitioner’s expansive application of “joined or connected in any way.”

Because the meaning of the subject claim phrase is clear from the intrinsic evidence, we need not resort to the proffered extrinsic evidence. *See, e.g., Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021); *Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375, 1380 (Fed. Cir. 2016) (“Extrinsic evidence may not be used ‘to contradict claim meaning that is unambiguous in light of the intrinsic evidence.’” (quoting *Phillips*, 415 F.3d at 1324)). Nonetheless, we find the parties’ reliance on the declaration testimony of Dr. van der Weide and Dr. Madisetti to be unhelpful as the witnesses offer little more than a reiteration of the parties’ respective arguments. *Compare* Pet. Reply 3–8,10, *with* Ex. 1039 ¶¶ 10–20; *compare* PO Resp. 10–13, *with* Ex. 2003 ¶¶ 54–57. Additionally, Dr. van der Weide’s opinion that controller 314 in the ’477 patent is the claimed determiner, Ex. 1039 ¶ 15, is inconsistent with the Specification’s description of the CPU within that controller as a determiner, Ex. 1001, 11:9–13. *See, e.g., Key Pharms. v. Hercon Lab ’ys Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998) (“What is disapproved of is an attempt to use extrinsic evidence to arrive at a claim construction that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.”).

Additionally, we do not find persuasive Petitioner’s argument that the testimony of Patent Owner’s witness supports Petitioner’s position. *See* Pet. Reply 8–9. Petitioner makes the internally inconsistent argument that “Patent Owner’s own expert agrees” that the proposed construction requiring coupling “between two different and distinct components” “does not necessarily exclude components which are joined within each other” because

“Dr. Madisetti is unwilling to opine that two components ‘coupled to’ each other *excludes* the scenario when one component is joined within the other.” *Id.* The lack of an opinion is not an assertion of agreement with Petitioner’s “joined within each other” claim construction.

In summary, we reiterate that the claim phrase “a profile parameter storage device coupled to said profile parameter determiner” does not encompass a purported determiner storing parameter values within itself, and, to show that the subject apparatus limitation is anticipated, Petitioner must demonstrate by a preponderance of the evidence that the reference discloses, *inter alia*, a determiner structure, a storage device structure, that the storage device is coupled to the determiner, and that the storage device structure is for storing both types of recited parameter values.

3. A Profile Parameter Storage Device for Storing Two Types of Parameter Values

Limitations 1.C recites, in part: “said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter determined [sic] by said profile parameter determiner.” Ex. 1001, 13:12–16; *see also id.* at 13:16–17 (limitation 1.D referring to “the values stored at said profile parameter storage device”).

In the Institution Decision, we stated our understanding of Patent Owner’s implied construction for the subject claim language, and observed that Petitioner’s position in the Petition is unclear. Paper 12, 17. We encouraged the parties to address any dispute in further briefing. *Id.* at 17–18. In post-institution briefing, the parties clarified their respective positions on the recited storage device for storing values of two types of parameters. *See, e.g.*, PO Resp. 13–14; Pet. Reply 10–12.

The parties' positions involve the claim term "device" and the non-claim term "components." We understand, for the reasons discussed immediately below, that the parties agree that the claimed "profile parameter storage device" is a single *device* for storing both types of parameter values, and that such a device may be comprised of multiple *components*.

Patent Owner contends that:

[A person of ordinary skill in the art] would naturally understand [the subject claim phrase] to mean that the signal-related parameter and the channel-related parameter must be stored in the same storage device (although, of course, there could be multiple storage devices, each storing both a signal-related parameter and channel-related parameter). (Ex. 2003 at ¶ 60.)

PO Resp. 14. Patent Owner asserts that "[t]his is consistent with the '477 patent, which discloses that various profiles are all stored/maintained 'at memory device 318,' so that they can be pulled and updated as needed, and then applied to the modems as needed." *Id.* (citing Ex. 1001, 10:15–42, 11:9–21, 12:7–12).

Petitioner draws a distinction between the recited "device" and its constituent components, contending that:

The plain and ordinary meaning of that [storage device] phrase does not require the signal-related parameter and channel-related parameter be stored together in a single memory *component* (Ex. 1039 ¶ 21). The *storage device* may comprise multiple memory *components*.

Pet. Reply 10–11 (emphasis added); *see also id.* at 12 (Petitioner contending that "a POSITA . . . would interpret the '477 Patent as contemplating that the storage device may comprise multiple distributed memory components"). We note that Petitioner, in the block quote above, refers, in the singular, to "[t]he storage device" for storing the two parameters, and

characterizes this as the “plain meaning” that is confirmed by an accusation that “multiple memory components, plural,” constitute the claimed profile parameter storage device. *Id.* at 11 (citing Ex. 1037 ¶ 214 (Dr. Madisetti’s expert report on infringement in the parallel District Court action)).

Petitioner’s Reply suggests that an example is a hard disk drive (storage device) that contains multiple NAND chips (components). *See id.* at 11 (quoting Ex. 1037 ¶ 373).

Patent Owner agrees that the claimed storage device may be comprised of multiple components. *See* Sur-reply 13 (“Certainly, had Petitioners identified such a [claimed] storage device within Genossar, that device could have had multiple components.”).

The parties’ position that the subject claim phrase requires the values of both types of parameters to be stored in the same “device” is consistent with the claim language. The claim recites “a profile parameter storage device,” “said profile parameter storage device for storing [two parameter] values,” and refers to “the values stored at said profile parameter storage device.” Ex. 1001, 13:10–16. Accordingly, the claim language speaks of a single device for storing both types of parameters.¹² And, Petitioner does

¹² Claim 1 utilized the open-ended “comprising” transitional phrase and the indefinite article “a” in “a profile parameter storage device.” We do not construe the claim as precluding more than one storage device with each for storing both parameter values. *See Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342–43 (Fed. Cir. 2008) (The general rule is that “a” means “one or more.”); *see also* PO Resp. 14 (Patent Owner’s contention that “there could be multiple storage devices, each storing both a signal-related parameter and channel-related parameter.”). Whether the challenged claims implicate an exception to the general rule of *Baldwin* is not an issue in this IPR, and we need not reach it. *Cf. Baldwin Graphic Sys., Inc.*, 512 F.3d at 1342–43 (“An exception to the general rule . . . only arises where the

not dispute Patent Owner’s assertion that the Specification consistently discloses a memory device storing profile in a singular memory device. *See* PO Resp. 14; *see, e.g.*, Ex. 1001, 10:17–37 (explaining that weighting values for the equalizers and other values of the profiles are stored at memory device 318, which is depicted as a single box in Figure 3). The parties do not direct our attention to any relevant intrinsic evidence in the prosecution history.

For purposes of this decision, we adopt the parties’ construction of “said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter” as meaning a single *device* for storing both types of parameter values, and that such a device may be comprised of multiple *components*.

Petitioner additionally argues, in the context of the Barratt ’470 anticipation ground, that “[a] proper construction of this [storage device] claim limitation encompasses storage in any location or combination of locations, so long as the parameters stored therein are available to the profile parameter determiner by a functional coupling.” Pet. Reply 19. As discussed above, we disagree that the claim phrase “coupled to” encompasses mere “functional coupling.” *See supra* Section II.C.2. And, to the extent that Petitioner argues that the purported storage *anywhere* of each of two parameters constitutes, as a matter of claim construction (i.e., as a matter of law), the disclosure of a single “profile parameter storage device for storing values [of the two parameters],” we disagree. Whether a person of ordinary skill in the art would consider values stored in different locations

language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule.”).

to be in different components of the same storage device is a fact issue that we will address for each challenge in the context of Petitioner's specific contentions and proffered evidence.

D. The Alleged Anticipation of Apparatus Claims 1, 3–5, 8, 9, 13, and 15 by Genossar (Ground 1)

Petitioner alleges that apparatus claims 1, 3–5, 8, 9, 13, and 15 of the '477 patent are anticipated by Genossar. *See* Pet. 15–20 (addressing claim 1). Patent Owner has disclaimed the method claims originally challenged in this ground. *See* Ex. 2007. For the apparatus claims, Patent Owner argues, *inter alia*, that the Petition fails to contain an allegation that that Genossar discloses the recited storage device “coupled to” a determiner, and that the Petition fails to show that Genossar discloses a “profile parameter storage device” for storing both recited types of parameter values. *See* PO Resp. 15–24, 27–30.

For reasons discussed below, Petitioner has *not* met its burden to show, by a preponderance of the evidence, that Genossar anticipates the challenged apparatus claims.

1. Genossar (Ex. 1005)

Genossar is titled, “Method for Rapid Synchronization of a Point to Multipoint Communication System.” Ex. 1005, code (54). Genossar discloses “a method for increasing the efficiency of processing of a received signal by storing the carrier frequency offset and equalizer taps between processing of burst transmissions.” *Id.* at 1:10–13. Genossar explains that, in fixed systems having a base station and terminal stations that are stationary, various values calculated during the signal processing change relatively slowly between consecutive bursts and “the equalizer coefficients typically do not change significantly between bursts.” *Id.* at 2:17–23. Thus,

by “using the values obtained from the calculation of equalizer coefficients for a previous burst transmission as the basis for the calculation for a subsequent consecutive burst from the same terminal station,” the efficiency of the equalizer coefficient adaptation could significantly improve. *Id.* at 2:23–30. However, according to Genossar, then-current systems did not take advantage of receiver parameters that change slowly. *Id.* at 2:30–32. Genossar, therefore, provides “a system and a method for storing certain relatively slowly changing receiver parameters between transmissions for signal processing, such as the equalizer coefficients and the carrier frequency offset.” *Id.* at 2:33–40.

Genossar discloses a system for communication between a base station and a terminal station, in which the base station receives a plurality of sequentially transmitted bursts from the terminal station according to a TDMA (time division multiple access) protocol. *Id.* at 2:43–47. Each burst features a synchronization portion, each of the plurality of sequentially transmitted bursts are denoted S_i , wherein i is an integer, and the plurality of sequentially transmitted bursts include a burst S_m and a burst S_n that are sent from one terminal station. *Id.* at 2:48–54. The base station transceiver comprises “an equalizer controller for determining each set of coefficients by processing a portion of an equalized signal corresponding to the synchronization portion of a burst S_i , according to an initialized coefficient adjustment procedure.” *Id.* at 2:54–3:3.

Figure 1 of Genossar is reproduced below.

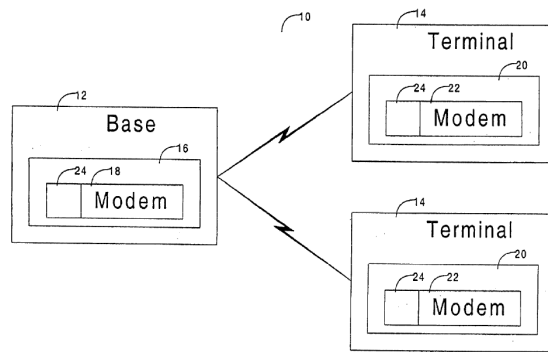


Figure 1

Figure 1 “shows a schematic block diagram of an exemplary system of base and terminal stations according to the background art.” *Id.* at 8:25–27.

Shown is system 10 including base station 12 which controls the transmissions of a plurality of terminal stations 14. *Id.* at 8:56–60. Base station 12 includes base station transceiver 16, which includes base station modem 18, and each of terminal stations 14 includes terminal station transceiver 20, which includes terminal station modem 22. *Id.* at 8:60–64. Radio-frequency signals are exchanged between base station 12 and terminal stations 14. *Id.* at 8:64–65. Each of base station transceiver 16 and terminal station transceiver 20 includes radio-frequency receiver unit 24 which receives an analog signal and then downconverts and demodulates the signal. *Id.* at 9:28–32.

Figure 2 of Genossar is reproduced below.

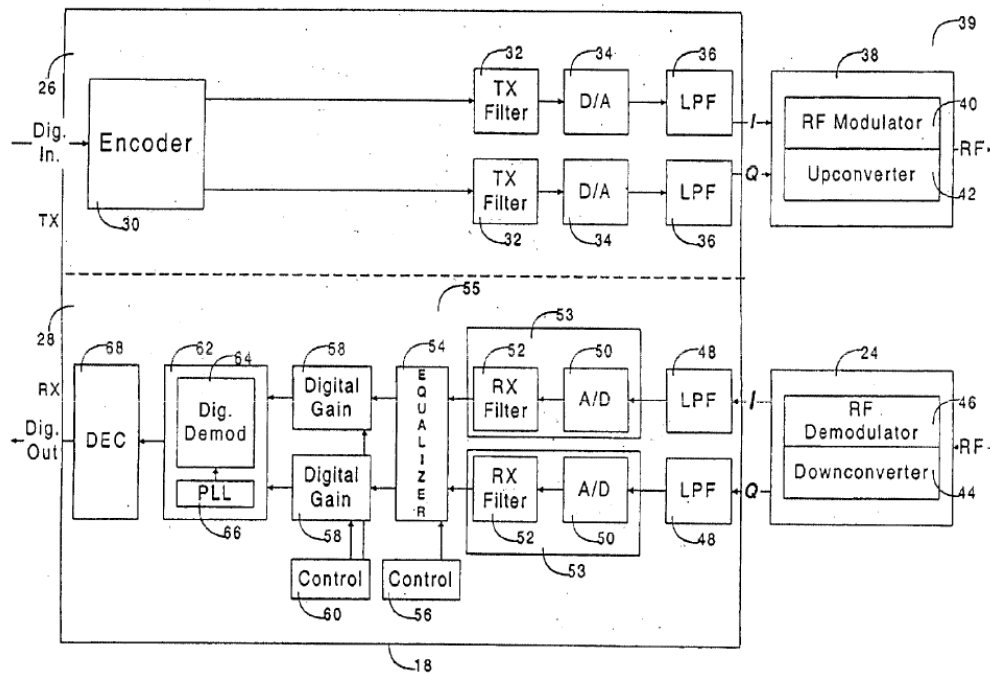


Figure 2

Figure 2 illustrates an exemplary base station transceiver of Genossar's system. *Id.* at 8:28–29. Figure 2 shows base station transceiver 16 having base station modem 18 with transmit portion 26 and receive portion 28. *Id.* at 9:59–67. Receive portion 28 includes radio-frequency receiver unit 24 that receives an analog radio-frequency signal. *Id.* at 10:33–35. Radio-frequency receiver unit 24 includes radio-frequency downconverter 44 and a demodulator 46. *Id.* at 10:35–36. Radio-frequency downconverter 44 converts the frequency of the transmitted radio-frequency signal to an intermediate frequency signal, the intermediate frequency signal then passes to demodulator 46, which splits the signal into the two components of “I” and “Q.” *Id.* at 10:36–42. The two signal components are then processed separately by analog low pass filters 48. *Id.* at 10:43–44. The low pass filtered signals are converted to digital signals by analog-to-digital converters 50, the digital signals are then passed to digital receive filters 52,

and the digital signals are then passed to equalizer 54, which is controlled by equalizer controller 56. *Id.* at 10:45–65. Equalizer controller 56 stores values for equalizer coefficients and then reuses these values as an initial estimate when a new signal is received. *Id.* at 11:28–31. The equalizer coefficients “can be stored for each terminal station 14 separately, and then reused when that terminal station 14 is transmitting again.” *Id.* at 11:37–39.

Later in the process, “[t]he digital signal is . . . passed to an automatic carrier frequency control 62, designated as ‘AFC’, which features a digital demodulator 64 and a PLL (phase locked loop) 66.” *Id.* at 11:51–53.

Genossar explains that “according to the background art, phase locked loops do not reuse previous values at the beginning of a burst, such that the process of convergence cannot take advantage of slowly changing values to converge on the optimum value more quickly.” *Id.* at 11:57–61. “By contrast, . . . PLL 66 at base station modem 18 does store and reuse the values for carrier frequency offset, such that the process of convergence at the beginning of a burst is able to occur much more quickly.” *Id.* at 11:61–65.

2. Discussion

As mentioned above, independent claim 1 recites a “profile-creating apparatus comprising” two components: “a profile parameter determiner” (limitation 1.A) and “a profile parameter storage device coupled to said profile parameter determiner” (limitation 1.C). Ex. 1001, 12:63–67, 13:1, 13:11–12. The determiner is for determining the values of two types of parameters (limitation 1.B), and the storage device is for storing those two types of determined values (limitation 1.C). *Id.* at 13:4–10, 13:12–16.

a. A Storage Device Coupled to Said Determiner

Petitioner, in the Petition, contends that “Genossar discloses a base station 12 (i.e., ‘receiving station’) that includes a receive portion 28 (i.e., ‘profile parameter determiner’).” Pet. 17. Petitioner contends that “Genossar discloses that the receive portion 28 (i.e., ‘profile parameter determiner’) *determines and stores* certain parameters for each terminal station.” *Id.* at 18–19 (citing Ex. 1005, 2:43–3:9, 10:33–54) (emphasis added). Petitioner contends that Genossar’s equalizer coefficients are the recited channel-related parameters, and further contends that “equalizer controller 56, forming part of the receive portion 28 (as shown in Figure 2), ‘stores the values for the equalizer coefficients.’” *Id.* at 17–19. Thus, the Petition asserts that the parameters are both determined and stored by the determiner (receive portion 28), and specifically asserts that the channel-related parameters are stored by a subcomponent of the determiner, namely the equalizer controller.

The section of the Petition for storage device limitation 1.C, in its entirety, states:

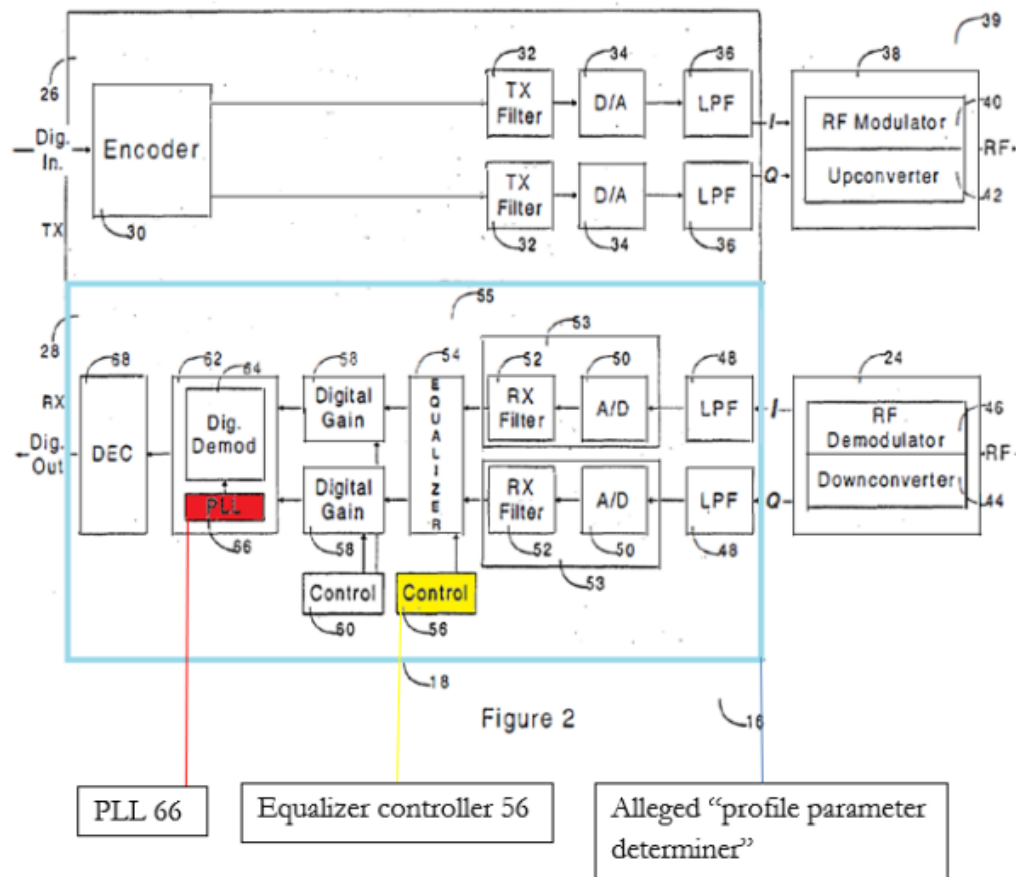
Genossar discloses Claim [1.C]. Ex. 1003, ¶77. Genossar teaches that the determined parameter values including “the equalizer coefficients can be *stored* for each terminal station 14 separately, and then reused when that terminal station 14 is transmitting again.” Ex. 1005, 11:22-65. Genossar expressly teaches that these determined parameter values can be stored in the “stored memory” (i.e., profile parameter storage device) of the base station. *Id.*, 13:37-45, 18:41-67. Thus, Genossar discloses Claim [1.C]. Ex. 1003, ¶77; *see also* Ex. 1011, 20-21.

Id. at 20 (brackets in original).

Patent Owner argues that, in the Petition, “Petitioners do not make any allegation whatsoever that Genossar anticipates a ‘profile parameter

storage device coupled to said profile parameter’ as claim element [1.C] recites.” PO Resp. 16 (brackets in original). Patent Owner further argues that “Petitioners do not even identify where within the base station—other than generally in its ‘stored memory’ (not pictured in Genossar’s Figure 2 . . .)—they allege the claimed ‘profile parameter storage device’ is located,” and that “the word ‘couple’ does not appear at all in Petitioners’ scant discussion of claim element [1.C].” *Id.* (citing Pet. 20; brackets in original).

Patent Owner notes that the Petition maps the two claimed types of parameters to Genossar’s carrier frequency offset (“signal-related parameter”) and equalizer coefficients (“channel-related parameter”). PO Resp. 27 (citing Pet. 19). Patent Owner also notes that Petitioner contends Genossar’s equalizer controller 56 stores the equalizer coefficients, and Patent Owner argues that the carrier frequency offset is stored in PLL (phase locked loop) 66. *Id.* (citing Pet. 17–18, 20, Ex. 1005, 11:62–64); *see also* Pet. Reply 18 (Petitioner referring to “the teachings in Genossar that the carrier frequency offset (reflecting the claimed signal-related parameter) is stored in at least the PLL 66 (Ex. 1005 at 11:61-65, 13:37-45) and ‘stored memory’ (Ex. 1005 at 18:52-56)”). Reproduced below is Patent Owner’s annotated version of Genossar’s Figure 2.



Id. at 25. Above is Genossar’s Figure 2 (base station transceiver 16) with Patent Owner’s annotations in the form of a blue box indicating receive portion 28, equalizer controller 56 in yellow, and PLL 66 in red. Ex. 1005, 9:61–62, 10:64–65, 11:53. As depicted in bottom half of the figure, the blue box that is receive portion 28—mapped in the Petition to the recited profile parameter determiner—encompasses several components.

According to Patent Owner, Petitioner’s contentions result in at least one of the recited parameters being stored within the purported determiner (receive portion 28) rather than in a distinct and separate profile parameter storage device. *See* PO Resp. 24–26. Patent Owner argues that, “[b]ecause Genossar teaches that its equalizer controller 56—which ‘stores the values for the equalizer coefficients’—form[s] part of the receive portion 28, this

equalizer controller 56 cannot be ‘coupled’ to the receive portion 28, as it is already ‘part of the receive portion 28.’” PO Resp. 26 (citing Pet. 17; Ex. 2003 ¶¶ 66–70) (first alteration added).

We find persuasive and agree with Patent Owner’s argument that the Petition does not contain an allegation with the necessary specificity as to how Genossar discloses “a profile parameter storage device coupled to said profile parameter determiner” as recited in limitation 1.C. *See, e.g.*, PO Resp. 16–19; *cf.* Pet. Reply 13–14 (Petitioner arguing that the Petition was adequate because the claim term “coupled to” encompasses components joined within each other or “functionally coupled”). The contentions in the Petition for limitation 1.C, as block quoted above, do not mention the claim phrase “coupled to.” Pet. 20. Those contentions for limitation 1.C only specifically mention the storing of one of the two recited parameters (equalizer coefficients (mapped to the channel-related parameter)), and asserts that the “determined parameter values” can be stored in an unspecified “‘stored memory’ (i.e., profile parameter storage device) of the base station.” *Id.*; *see* Ex. 1005, 8:56–60, Fig. 1 (indicating that Genossar’s base station 12 is the major overall component that communicates with a plurality of terminal stations, and that includes the transceiver and other components). Petitioner made the decision to map the receive portion 28 (which purportedly “generates the relevant values,” Pet. Reply 14) to the recited determiner, thus encompassing, in one overall component, the two different subcomponents (the PLL and the equalizer controller) that correspond to the two types of purported parameters. However, this decision results in a theory of the case where the parameter values are stored within an overall “determiner” component rather than in “a profile parameter

storage device coupled to said profile parameter determiner,” as required by limitation 1.C. *See, e.g.*, Pet. Reply 14 (Petitioner, after institution of this trial, referring to “the memory components such as the equalizer controller 56, stored memory, and PLL 66, which serve as the claimed profile parameter storage device.”). For the reasons discussed above in the claim construction section, we do not agree with Petitioner’s argument that a subcomponent is “coupled to” the overall component (the purported determiner) that includes the subcomponent. *See supra* Section III.C.2.

Petitioner has not shown by a preponderance of the evidence that Genossar discloses “a profile parameter storage device coupled to said profile parameter determiner” as recited in limitation 1.C.

b. A Storage Device for Storing Two Types of Parameter Values

The second phrase in limitation 1.C recites, “said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter.” Ex. 1001, 13:12–16; *see also id.* at 13:16–17 (limitation 1.D beginning with the phrase, “the values stored at said profile parameter storage device . . .”). As discussed above, this claim phrase requires a single *device* for storing both types of parameter values, and that such a device may be comprised of multiple *components*. *See supra* Section II.C.3.

Patent Owner argues that Petitioner has failed to show that Genossar stores the two types of parameter values in the same storage device. *See* PO Resp. 27–30; PO Sur-reply 12–13.

In the Petition, Petitioner contends that equalizer coefficients (mapped to the recited “channel-related parameter”) can be stored and that “Genossar expressly teaches that these determined parameter values can be stored in the

‘stored memory’ (i.e., profile parameter storage device) of the base station.” Pet. 19–20 (citing Ex. 1005, 13:37–45, 18:41–67); *see also id.* at 17–18 (asserting that equalizer controller 56 stores values for the equalizer coefficients). For this storage device limitation, Petitioner does not mention explicitly the storing of a second type of a parameter value. *See id.* at 20. We determine that the contentions in the Petition, even if correct, lack the necessary specificity to show by a preponderance of the evidence that Genossar discloses the claimed storage device for storing both types of recited parameters. *See* PO Sur-reply 13 (“Petitioners failed to meet their burden with respect to this claim element because they did not even identify where within the base station—other than generally in its ‘stored memory’—they allege the claimed ‘profile parameter storage device’ is located.”).

Patent Owner, in its Response, argues that Genossar discloses that the values for the purported two parameters are stored in two different devices. PO Resp. 27–28. According to Patent Owner, “the Petition’s alleged signal-related parameter [carrier frequency offset] is both stored and reused in Genossar’s PLL 66, and the Petition’s alleged channel-related parameter [equalizer coefficient] is both stored and reused in Genossar’s equalizer controller 56.” *Id.* (citing Pet. 17–18; Ex. 1005 at 11:62–64; Ex. 2003 ¶¶ 71–73).

After Patent Owner identified the storage locations of the purported parameter values, Petitioner argued:

As discussed above, the plain and ordinary meaning of this claim limitation would encompass storing the at-issue parameter values on multiple memory components which collectively constitute the profile parameter storage device. Under that construction, the teachings in Genossar that the carrier frequency offset (reflecting the claimed signal-related

parameter) is stored in at least the PLL 66 (Ex. 1005 at 11:61–65, 13:37–45) and “stored memory” (Ex. 1005 at 18:52–56) and that the equalizer coefficients (reflecting the claimed channel-related parameter) are stored in at least the equalizer controller 56 (Ex. 1005 at 11:28–30, 11:38–40, 13:37–45) anticipate this claim limitation as they are both part of the profile parameter storage device comprised of those memory components.

Pet. Reply 18; *see also id.* at 14 (Petitioner arguing that “the memory components such as the equalizer controller 56, stored memory, and PLL 66, . . . serve as the claimed profile parameter storage device.”).

Whether Genossar discloses the storing of two parameter values in separate components of a single profile parameter memory device or in separate memory devices is an issue of fact, not an issue of claim construction, as Petitioner urges. Absent from the block quote above is a citation to any expert opinion in support of this factual issue of whether the PLL, the unidentified “stored memory,” and the equalizer controller collectively constitute a single memory device of the claimed invention. Petitioner’s theory relies on conclusory attorney-argument, which is not evidence. *See Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (“Attorney argument is not evidence.”).

We determine that Petitioner has not demonstrated by a preponderance of the evidence that a person of ordinary skill in the art would understand that a memory component of the PLL and a memory of the equalizer controller constitute a single “profile parameter memory device,” within the meaning of the claim.

c. Conclusion as to the Apparatus Claims

Having considered the parties’ arguments and evidence, we determine that Petitioner has *not* shown by a preponderance of the evidence that independent apparatus claim 1 is anticipated by Genossar. The remaining

apparatus claims challenged in this ground depend from claim 1. Petitioner's challenges to those dependent claims do not cure the defects regarding independent claim 1. *See* Pet. 21–26. Accordingly, Petitioner also has *not* shown that dependent claims 3–5, 8, 9, 13, and 15 are anticipated by Genossar.

E. The Alleged Obviousness of Claims 2, 10–12, 14, and 18 over Genossar and WiMAX (Ground 2)

Petitioner alleges that dependent claims 2, 10–12, 14, and 18 of the '477 patent would have been obvious over Genossar and WiMAX. *See* Pet. 28–40. Patent Owner argues that Petitioner's articulation of this ground 2 fails to cure the problems with the challenge to independent claims 1 and 16. PO Resp. 23–24. Patent Owner also argues that Petitioner has failed to establish that WiMAX is prior art. *See id.* at 31–38.

1. WiMAX (Ex. 1006)

WiMAX is titled, “Air Interface for Fixed Broadband Wireless Access Systems” and indicates that it is a document of the Institute of Electrical and Electronics Engineers (IEEE). Ex. 1006, 1.¹³ WiMAX states:

[t]his document is FOR COMMENT as a potential DRAFT standard for medium-access and physical layer components that meet the functional requirements of a point-to-multipoint Broadband Wireless Access (BWA) system as defined by the IEEE 802.16 Working Group. Detailed logical, electrical, and signal processing specifications are presented that enable the production of interoperable equipment.

Id.

¹³ We cite here to the page numbers of the exhibit rather than the page numbers of the underlying document.

2. Dependent Apparatus Claims 2, 10–12, and 14

Claims 2, 10–12, and 14 depend directly or indirectly from independent apparatus claim 1. Petitioner’s challenge to those dependent claims does not cure the flaws in the underlying ground alleging anticipation of independent apparatus claim 1. *See* Pet. 28–40. Accordingly, Petitioner has not demonstrated by a preponderance of the evidence that apparatus claims 2, 10–12, and 14 would have been obvious over the combination of Genossar and WiMAX.

3. Dependent Method Claim 18 and the Status of WiMAX as a Prior Art Printed Publication

Dependent method claim 18 is not the subject of Patent Owner’s statutory disclaimer, and therefore remains at issue in this *inter partes* review. A threshold issue is whether Petitioner has established that the WiMAX document is a prior art printed publication.

“In an IPR, the petitioner bears the burden of establishing by a preponderance of the evidence that a particular document is a printed publication.” *Nobel Biocare Servs. AG v. Intradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018) (citing *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018)).

“Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the touchstone in determining whether a reference constitutes a ‘printed publication’” *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). “A reference will be considered publicly accessible if it was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it.” *Medtronic*, 891 F.3d at 1380 (internal quotation marks and citations omitted). “Whether a reference is publicly accessible is determined on a case-by-case basis based on the ‘facts and circumstances

surrounding the reference's disclosure to members of the public.” *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (quoting *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004)).

Id. “[A] work is not publicly accessible if the only people who know how to find it are the ones who created it.” *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1372 (Fed. Cir. 2019) (citing *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1196 (Fed. Cir. 2008) *Application of Bayer*, 568 F.2d 1357 (CCPA 1978)). Accordingly, in this case, Petitioner must demonstrate by a preponderance of the evidence that the WiMAX exhibit was disseminated or otherwise made available to interested ordinary artisans outside of the group that created the document. Petitioner has failed to satisfy that burden.

There is no dispute that issued IEEE standards are published and are well known to those in the art. The WiMAX reference relied on by Petitioner is not an issued standard. There also exists IEEE *draft* standards, which, according to Petitioner, were available to the public and easily searchable. *See* Pet. 10. The WiMAX reference relied on by Petitioner is not labeled as simply a draft standard. *See* Ex. 1006, 1. Rather, the WiMAX reference relied on by Petitioner bears the label “potential DRAFT standard.” *Id.*; *see also* Pet. 11 (Petitioner referring to WiMAX as “as a potential draft standard”). Petitioner’s arguments and evidence are directed to a “draft standard,” and Petitioner has brought forth little or no evidence as to the import of the “potential” aspect of a draft standard or whether a potential draft standard would have been made accessible to persons beyond the group involved in the drafting. We first turn to the contentions in and evidence submitted with the Petition, which is where Petitioner was obligated to have made a *prima facie* showing under the “reasonable

likelihood” standard. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential) (“[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication.”); *cf.* Consolidated Trial Practice Guide, November 2019, 73 (available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>) (“Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.”).

Petitioner states that, “[f]or purposes of this proceeding only, Petitioners have assumed that the earliest alleged priority date of the ’477 Patent is not earlier than January 19, 2001,” and contends that:

WiMAX was published in September 2000 and qualifies as prior art under at least pre-AIA U.S.C. §102(a). Ex. 1006. First, WiMAX includes a 2000 Copyright stamp. *Id.*, 1. Second, IEEE draft standards such as WiMAX were and are available to the public and are easily searchable through libraries and other IEEE resources. Ex. 1003, ¶54. These indicia establish WiMAX was publicly available as of its 2000 publication date. *See Ericsson Inc. v. Intellectual Ventures I LLC*, IPR2014-00527, Paper 41 at 10-12 (PTAB May 18, 2015).

Furthermore, any POSITA interested in the subject matter of fixed access wireless network systems in the early 2000’s would have likely been a member of the IEEE or, at the very least, followed its publications and discussions, because of the IEEE’s notoriety in the industry as a source of innovation and important standards. Ex. 1003, ¶55. Those skilled in the art and interested members of the public, such as those working to develop standards for telecommunications and those working to implement the standards, would have had

access to relevant documents at the IEEE, including draft standards such as WiMAX. *Id.*

Pet. 10–11 (footnote omitted). Notably absent from these contentions is the word “potential” notwithstanding that Petitioner acknowledges that the relied-on WiMAX document is a potential draft standard. *See id.* at 11.

The abstract on the first page of WiMAX states: “This document is FOR COMMENT as a potential DRAFT standard” *Id.* This suggests that the document not only is not an issued standard, it is not even a draft standard. WiMAX also states, in a footer repeated on almost every page, that “[t]his is an unapproved Task Group document being circulated for comment.” *See, e.g., id.*

As shown in the block quote above, Petitioner—citing a PTAB case finding that the information in a copyright line of an IEEE publication is evidence of a date of publication and public accessibility—asserts that the exhibit “includes a 2000 Copyright stamp.” Pet. 10 (citing *Ericsson Inc.*, IPR2014-00527, Paper 41 at 10–12). Contrary to Petitioner’s assertion, we are unable to find on Petitioner’s cited first page of the document “a 2000 Copyright stamp,” and Petitioner does not point out such or reiterate the contention in its Reply Brief, *see* Pet. Reply 22–24.¹⁴ The header on the first page contains the following: “IEEE 802.16.1-00/01r4, September 2000.” *Id.* The document, at the bottom of that same first page, states “Published August 2000,” and has, for the International Standard Book Number (“ISBN”), “0-7381-xxxx-x.” *Id.*; *cf.* PO Resp. 32 (Patent Owner referring to “a *placeholder* ISBN”). The header on some subsequent pages also has the

¹⁴ In contrast to the evidence here, the copyright line in the cited *Ericsson* case read: “0-7803-4506-1/98/\$10.00 © 1998 IEEE.” *See Ericsson Inc.*, IPR2014-00527, Paper 41 at 10 n.9.

September 2000 date, while the header on several other pages has a date of August 2000. *See, e.g.*, Ex. 1006, 2 (September); *id.* at 17 (August). We find that the relied-on exhibit has the appearance of document being prepared for future publication with certain fields in a template filled in, possibly with prospective dates.

The Petition relies on the testimony of its technical expert, Dr. van der Weide, as support for the argument that the WiMAX reference was publicly available. Pet. 10–11 (citing Ex. 1006, 1; Ex. 1003 ¶¶ 54–56). Dr. van der Weide’s pertinent testimony begins with the statement: “I have been informed that I should assume WiMAX was published in September 2000 and qualifies as prior art under at least pre-AIA U.S.C. §102(a).” Ex. 1003 ¶ 54. Thus, Petitioner’s witness was told to assume the very fact at issue. Dr. van der Weide, after stating his foundational assumption that the document was published, refers to the WiMAX reference as a “draft standard[,]” goes on to discuss the public availability of *published draft* standards, but does not explain the import of the modifier “potential” in the document’s self-identification as a “potential DRAFT standard.” *See id.* ¶¶ 54–56; Pet. 10–11 (similar); Ex. 1006, 1; *see also* Ex. 1003 ¶ 56 (Dr. van der Weide acknowledging that the document is a potential draft standard). Neither Dr. van der Weide nor the Petition addresses the facial inconsistency of the two dates—August and September—on the first page of the document. *See* Pet. 10–11. Dr. van der Weide testifies that “WiMAX includes a 2000 Copyright stamp,” *id.* ¶ 54 (citing Ex. 1006, 1), but, as mentioned, we are unable to locate a copyright stamp on the cited page. We do not find Dr. van der Weide’s testimony on the purported publication of the relied-on version of WiMAX to be credible.

We acknowledge that Dr. van der Weide asserts that, “[b]y releasing this draft standard ‘FOR COMMENT,’ the IEEE 802.16 Working Group’s goal was to intentionally circulate the draft to the interested public in order to garner feedback on its contents from professionals and POSITAs in the relevant technical space.” Ex. 1003 ¶ 55 n.4. However, Dr. van der Weide does not identify a basis for this conclusory assertion as to the IEEE 802.16 working group’s goal or intent. *See id.* And, again, he testifies regarding a “draft standard,” not a potential draft standard.

In the Institution Decision, we determined that the Petition had failed to establish, under the lower “reasonable likelihood” standard, that the relied-on WiMAX exhibit is prior art. Paper 12, 34. Patent Owner, in its Response to the Petition, argues that WiMAX lacks indicia of public availability and that Petitioner has failed to show that a potential draft IEEE standard would have been publicly available prior to the critical date. *See* PO Resp. 31–38. Patent Owner asserts, *inter alia*:

Petitioners have provided no evidence of the public accessibility of *potential* draft IEEE standards. . . .

Petitioners have provided no evidence from anyone with knowledge of the IEEE 802.16 Working Group, how it stores its potential draft standards, and how a member of the interested public could find out about any potential draft standards, much less gain access to those potential draft standards.

. . . .

Here, Petitioners provide no evidence that anyone other than a member of the 802.16 Working Group would have known about or received a copy of the WiMAX potential draft standard. By contrast, Petitioners assert that “an interested POSITA would have been aware of and purposefully sought out IEEE documents because of the organization’s importance in developing standards for telecommunications.” (Petition at 11, n. 2.) Noticeably missing, however, is any evidence that the IEEE 802.16 Working Group publicized the existence of the

WiMAX potential draft standard beyond the Working Group such that any member of the interested public would have been aware of it known [sic] to request it.

Id. at 35–36.

After Patent Owner and the Board pointed out many flaws in Petitioner’s prima facie case, Petitioner moved to submit supplemental information in the form of Exhibits 1017–1035, including a supplemental declaration of Dr. van der Weide and a declaration of Mr. Carl Eklund. Paper 15, 1–2. Because Petitioner, in the Petition, failed to meet its threshold burden regarding the status of WiMAX as a prior art printed publication, and Petitioner did not explain adequately why it did not, at the time of the Petition, come forward with the supplemental information and present related arguments, we denied Petitioner’s motion to submit the supplemental information. Paper 18.

Petitioner’s Reply Brief does not argue that the Petition made an adequate showing as to the prior art status of WiMAX, but, rather, relies on new evidence, namely the same information that was the subject of the denied motion. *See, e.g.*, Pet. Reply 2–3 n.2 (“Petitioners reference the evidence previously submitted in connection with their Motion to Submit Supplemental Information (Paper 15).”); *id.* at 22–24 (discussing the two new declarations and asserting that “Exhibits 1017–1035 do not change the evidence on which Petitioners relied in the Petition.”).

Petitioner argues that it is allowed to rely on the new post-institution evidence notwithstanding the timing and our denial of Petitioner’s motion to submit it. Pet. Reply 2–3 n.2 (citing *Valve Corp. v. Ironburg Inventions Ltd.*, 8 F.4th 1364, 1370 n.6 (Fed. Cir. 2021) and *Hulu, LLC*, IPR2018-01039, Paper 29 at 14–16); *see also id.* at 22–23 (citing same). Petitioner

characterizes the new exhibits as responsive to Patent Owner’s “evidentiary challenges.” *Id.* at 24 (citing Exhibits 1017–1035). Patent Owner argues that, “[b]ecause the Board has already denied Petitioners’ Motion to submit Supplemental Exhibits 1017–1035 as supplemental information, Petitioners’ reliance on those same Exhibits in Reply should be stricken, at the very least.” PO Sur-reply 24 (citing Paper 18, 10).

We disagree with Petitioner’s characterization of its belated injection of new evidence into the record as a proper response to an evidentiary objection. Petitioner submitted the new evidence in an attempt to address glaring gaps in its prima facie case. The cases cited by Petitioner do not support its implied proposition that, if a patent owner challenges a petition’s showing as to the prior art status of a reference, the petitioner is allowed an unqualified opportunity to provide additional evidence of public availability. *See* Pet. Reply 22–23; *see also id.* at 2–3 n.2. *Hulu* states that, “[w]hile the petitioner must submit evidence sufficient to meet the reasonable likelihood standard, some limited opportunities exist for the petitioner to present new evidence.” and *Hulu, LLC*, IPR2018-01039, Paper 29 at 14. *Hulu* does not stand for the proposition that a petitioner that fails to submit evidence sufficient to meet the reasonable likelihood standard may cure that failure later via those limited opportunities, as Petitioner implies. We do not read *Valve* as holding, as Petitioner appears to urge, that the Board lacks discretion to determine that public accessibility evidence is untimely. *See* Pet. 22–23. For Petitioner’s cited proposition, *Valve* relies on *VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1064–65 (Fed. Cir. 2020). *Valve Corp.*, 8 F.4th at 1370 n.6. *VidStream* states: “[The Board] has broad discretion to regulate the presentation of evidence” *VidStream LLC*, 981 F.3d

at 1065 (quoting *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1081 (Fed. Cir. 2015) (alterations in original)).

We decline to consider Petitioner’s supplemental information relied on in Petitioner’s Reply. *See, e.g.*, Consolidated Trial Practice Guide at 73 (“Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.”); *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“[T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute. While the Board’s requirements are strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR.”). Having reviewed anew the remaining timely arguments and evidence, we determine that the Petition fails to demonstrate by a preponderance of the evidence that WiMAX was publicly accessible.

Even if we considered the new evidence, we still would not be persuaded that Petitioner had met its burden. As an initial matter, we are unable find any mention in the new declarations of the word “potential,” as in a “potential DRAFT standard.” *See* Exs. 1034, 1035; Tr. 42:8–43:14 (Petitioner’s counsel at the oral argument failing to identify any place in the supplemental information discussing the modifier “potential,” and arguing that “the description of what the document is not the key factor here.”); *cf.* Pet. Reply 22–24 (Petitioner’s Reply Brief failing to address the meaning of the word “potential”). The declarants testify regarding an “IEEE 802.16.1 Draft Standard,” Ex. 1035 ¶ 9 and Ex. 1034 ¶ 11, which is facially inconsistent with the document itself stating: “This document is FOR

COMMENT as a *potential* DRAFT standard,” Ex. 1006, 1 (emphasis added).

Petitioner submits a new declaration from Dr. van der Weide (Ex. 1035) in support of the argument that patent applications filed before the critical date “reference WiMAX” and thus show that WiMAX was access and reviewed by interested persons. Pet. Reply 23 (citing Ex. 1035 ¶¶ 11–23). Dr. van der Weide’s testimony does not establish adequately that the document referenced in each of those applications is the same version of the WiMAX standard now relied on by Petitioner. Petitioner also relies on a declaration from Mr. Eklund, who “was personally familiar with WiMAX.” Pet. Reply 23–24. Unlike Petitioner’s (Pet. 11) and Dr. van der Weide’s (Ex. 1003 ¶ 56) admission prior to Institution, Mr. Eklund does not acknowledge that the document relied on by Petitioner is a *potential* draft standard, and this calls into question the credibility of his testimony.

We determine that Petitioner has failed to establish by a preponderance of the evidence that the WiMAX potential draft standard relied-on by Petitioner was publicly accessible prior to the critical date, and therefore has not established that it is prior art. Accordingly, Petitioner has not shown that dependent method claim 18 would have been obvious over Genossar and WiMAX.

F. The Alleged Anticipation of Claims 1, 3–6, 8–10, 13, and 15 by Barratt ’470 (Ground 3)

Petitioner alleges that apparatus claims 1, 3–6, 8–10, 13, and 15 of the ’477 patent are anticipated by Barratt ’470. See Pet. 40–49 (addressing claim 1). Patent Owner has disclaimed the method claims originally challenged in this ground. See Ex. 2007. Patent Owner argues that, “[a]s in Grounds 1–2, in Ground 3, Petitioner once again fails to allege that the prior

art—Barratt ’470 on this occasion—discloses ‘a profile parameter storage device *coupled* to said profile parameter determiner,’ and that this alleged ‘profile parameter storage device’ is ‘for storing values representative of the at least one signal-related parameter *and* the at least one channel-related parameter.’” PO Resp. 39 (citing Pet. 47–48).

For reasons discussed below, Petitioner has *not* met its burden to show, by a preponderance of the evidence, that Barratt ’470 anticipates the challenged apparatus claims.

1. Barratt ’470 (Ex. 1007)

Barratt ’470 pertains to wireless (radio) communications, and, in particular, “using antenna arrays and spatial signal processing in wireless communications systems to perform demodulation, including correction for frequency offset and alignment, in the presence of co-channel interference.”

Ex. 1007, 1:19–24. Barratt ’470 discloses:

[a] method and apparatus for generating a reference signal for use in an alternating projection loop which is part of demodulation in a base station of a wireless communication system, the reference signal relaxed to minimize the effects of frequency offset and amplitude variations, the base station including an array of antennas. The alternating projection loop demodulates in the presence of co-channel interference and includes correction for time alignment and/or frequency offset.

Id., code (57).

Barratt ’470 states that its method and apparatus “are for incorporation in a cellular system using the ‘Personal Handyphone System’ (PHS), ARIB Standard, Version 2 (RCR STD-28),” in which “[t]he PHS system is an 8 slot time division multiple access (TDMA) system with true time division duplex (TDD).” *Id.* at 7:58–66. Barratt ’470 explains that “the 8 timeslots are divided into 4 transmit (TX) timeslots and 4 receive (RX) timeslots.” *Id.*

at 7:67–8:1. According to Barratt '470, in PHS, “a burst is defined as the finite duration RF [(radio frequency)] signal that is transmitted or received over the air during a single timeslot.” *Id.* at 8:11–13. Barratt '470 further explains that “any particular remote terminal and a base station communicate in bursts in timeslots that are a frame apart.” *Id.* at 8:33–35.

Figure 1 of Barratt '470 is reproduced below.

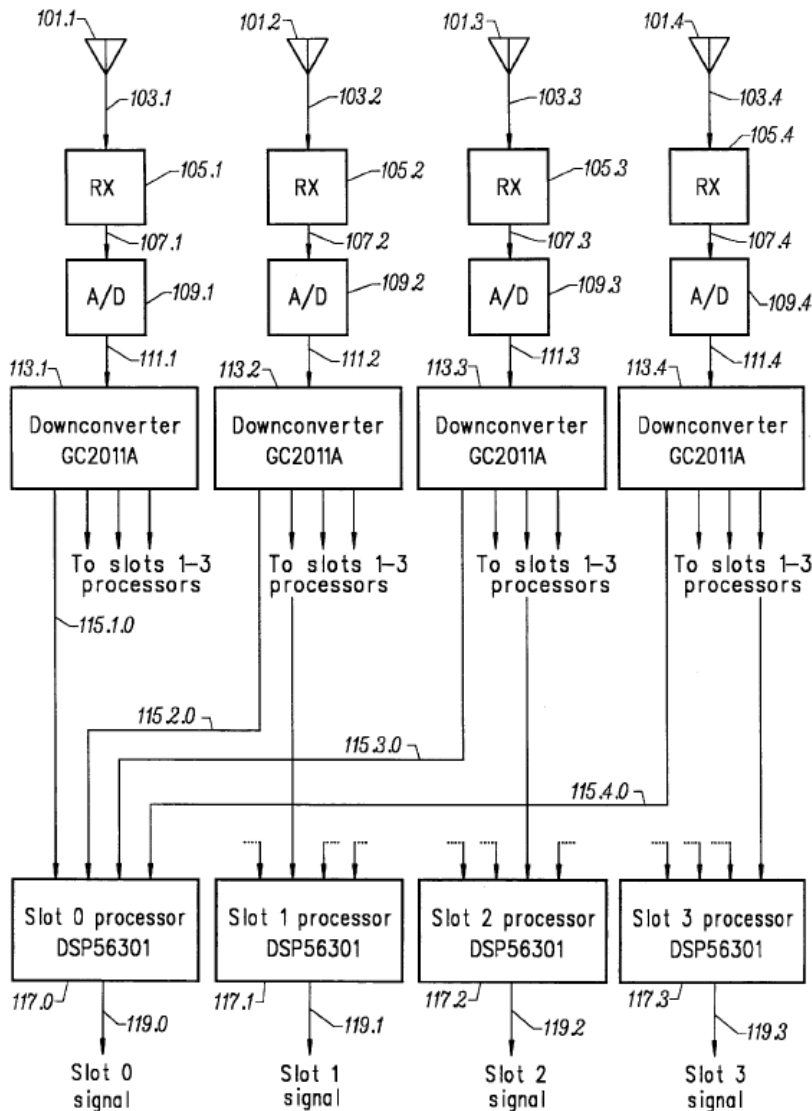


FIG. 1

Figure 1 depicts the architecture of the preferred embodiment of the

apparatus of Barratt '470. *Id.* at 9:31–32. Figure 1 shows an apparatus having antennas 101.1–101.4, with outputs mixed down in analog by RX blocks 105.1–105.4, respectively. *Id.* at 9:31–37. The signals are then digitized by converters 109.1–109.4, and filtered by digital filters 113.1–113.4, respectively. *Id.* at 9:37–59. “There are four downconverted outputs from each antenna’s GC2011A digital filter device 113, one per time slot,” and, “[f]or each of the four timeslots, the four downconverted outputs from the four antennas are fed to a digital signal processor (DSP) device 117 for further processing according to this invention.” *Id.* at 9:60–65.

Barratt '470 further discloses that:

For any timeslot, SYNCH mode processing to determine the initial weight matrix, frequency offset and time alignment parameters, and normal mode processing to provide frequency offset and alignment determination, frequency offset and alignment correction, signal copy operations, weight vector determination, decimation, filtering, and demodulation is carried out by a DSP, one for each timeslot.

Id. at 24:31–37; *see also id.* at 16:17–20 (“[T]he initial frequency offset and initial weight vector are determined. Thus, in a single SYNCH burst, all three parameters are estimated: the initial alignment, frequency offset and weight vector w_r .”). “The quantities determined in SYNCH mode are used as initial conditions for normal mode, during which the method and apparatus of this invention continues to compensate for frequency offset and alignment,” and “[t]he values for offset and alignment are updated during normal mode.” *Id.* at 16:25–30.

“[T]he method involves a recursive loop repeated every frame.” *Id.* at 16:36–37. “The first time one enters normal mode, one starts the recursive loop with an initial estimate of w_r and of the alignment and frequency offset obtained from SYNCH mode.” *Id.* at 16:37–40. “On an

ongoing basis, one starts the loop with starting estimate of w_r and of the alignment and frequency offset obtained from the processing of the same signal on the previous frame.” *Id.* at 16:40–43.

Figure 6 of Barratt ’470 is reproduced below.

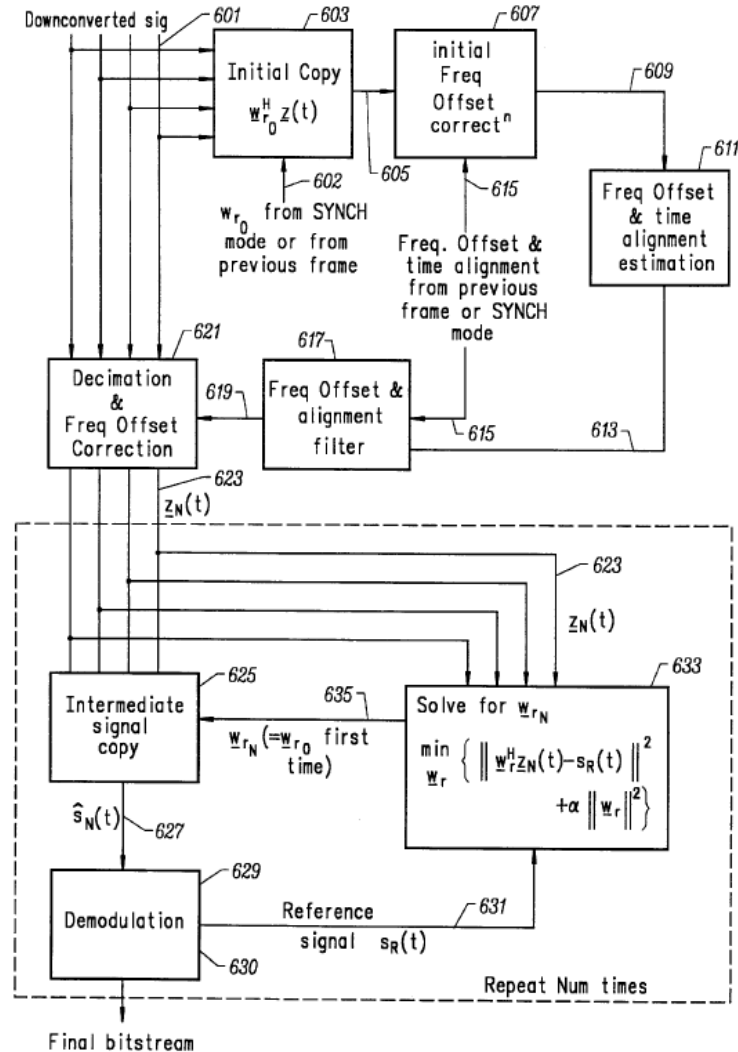


FIG. 6

Figure 6 is a flow chart showing the normal mode. *See id.* at 16:44–45. The normal mode starts at 602 with the value of w_r either from the previous frame or, at the start, from the SYNCH mode estimate. *Id.* at 16:52–54.

Given a starting value of w_r , denoted by w_{r0} , one produces an estimate of the signal of interest by an initial signal copy

operation 603 using this w_{ro} , together with the downconverted received signal vector $z(t)$ (labeled 601) to produce an estimate 605 of the signal expressed as initial copy signal

$$\hat{s}_0(t) = w_{ro}^H z(t).$$

Step 607 corrects initial copy signal 605 for frequency offset using the frequency offset from the last frame, or from the SYNCH mode if this is the first frame. The frequency corrected initial copy signal 609 is now used in step 611 to compute a new frequency offset difference estimate and an alignment estimate. The result frequency offset difference and alignment estimates 613 are combined in an estimate filter 617 with estimates 615 from previous frames, or with the SYNCH mode estimate if this is the first frame, to produce the updated frequency offset and alignment estimates 619.

Id. at 16:54–17:5.

2. Discussion

As mentioned, independent apparatus claim 1 requires “a profile parameter storage device coupled to said profile parameter determiner” and recites that “said profile parameter storage device [is] for storing values representative of [two specific types of parameters].” Ex. 1001, 13:10–15.

In the Petition, Petitioner maps the DSP of Barratt ’470 to the recited “profile parameter determiner” of limitation 1.A. *See* Pet. 42–43. Although limitation 1.A is not directed to the structure that stores parameter values, Petitioner contends that “[e]ach DSP 117 *maintains values associated with the signals* received during that timeslot, including: an initial weight matrix, frequency offset, and time alignment parameters.” *Id.* at 42 (emphasis added) (citing Ex. 1007, 8:36–61, 16:17–17:7, 24:24–48); *see also id.* at 43 (citing, for the concluding sentence for this limitation, Ex. 1003 ¶¶ 135–136; Ex. 1001, 8–16). Thus, Petitioner, for this limitation, contends that, in

Barratt '470, it is the profile parameter determiner that stores values representative of the values of the parameters.

For the limitation specifically calling for the storage device—namely, limitation 1.C, “a profile parameter storage device coupled to said profile parameter determiner”—Petitioner contends that “Barratt '470 teaches that *the base station maintains various parameter values (e.g., antenna weights, frequency offset, time alignment, etc.) for each subscriber station.*” Pet. 47 (emphasis added) (citing Ex. 1003 ¶ 145; Ex. 1007, 8:48–62, 16:17–43, 16:44–17:7, 18:8–20, 18:39–45). Petitioner further contends that the method of Barratt '470 involves the use of parameter values in a recursive loop repeated every frame and, “[t]hus, Barratt '470 discloses that the base station necessarily includes a ‘profile parameter storage device’ for *storing* these parameter values *from one frame to next* for each signal of interest, as required by Claim [1.C].” *Id.* at 48 (citing Ex. 1003 ¶ 145; Ex. 1011, 20–21 (infringement contentions)) (emphasis and bracketed limitation number in original). The Petition, for limitation 1.D, similarly contends that “Barratt '470 discloses a *base station* that maintains various parameter values to facilitate receive operations performed on subsequent bursts of the same signal,” referring to values obtained in a previous frame being used in the current frame, and asserts that, “[t]hus, Barratt '470 discloses storing values to facilitate receive operations performed on subsequent bursts of the same burst data signal.” *Id.* (citing Ex. 1007, 8:48–61, 16:17–18:45, Fig. 6) (emphasis added).

As the parties agree, Petitioner’s contention that the base station of Barratt '470 *necessarily* includes a storage device is an assertion of inherent disclosure. *See* Pet. Reply 15; PO Resp. 40. “Inherent anticipation requires

that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present, in the prior art.” *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002), *quoted with approval in Therasense, Inc.*, 593 F.3d at 1332.

Patent Owner argues that, “[e]ven if Barratt ’470 necessarily includes a ‘profile parameter storage device’ as the Petition alleges, it is **not** the case that Barratt ’470 **necessarily** includes a ‘profile parameter storage device[’] **arranged in the same manner** recited in claim [1.C]: (1) ‘coupled’ to a profile parameter determiner, and (2) storing both the alleged signal-related parameter and channel-related parameter.” PO Resp. 40 (first alteration added; limitation brackets in original) (citing *Therasense, Inc.*, 593 F.3d at 1332 (“Inherency . . . may not be established by probabilities or possibilities.”)). Patent Owner further argues that Figure 6 of Barratt ’470—upon which Petitioner relies as an inherent disclosure of storing due to the recursive loop (Pet. 48–49)—provides no disclosure of where the parameter values are stored, whether the two types are stored in the same profile parameter storage device, or whether such a storage device is “coupled to” the purported profile parameter determiner. PO Resp. 40–42 (citing, *inter alia*, Ex. 2003 ¶¶ 78–79). Patent Owner further asserts that the requirement for inherent disclosure (that the claimed arrangement must necessarily be present) is not satisfied because the two parameter values could be stored in separate devices as, for example, is done in the Genossar reference. *Id.* at 43. Patent Owner asserts that the parameter values also could be stored in a subcomponent of the alleged determiner, and therefore not in a separate storage device “coupled to” that determiner. *See id.*; PO Sur-reply 16–17. And, according to Patent Owner, “[i]n another scenario, the profile

parameters are stored in the cloud, and not on the claimed profile-creating apparatus.” PO Sur-reply 17.

We agree with Patent Owner’s argument that the Petition lacks adequate allegations as to how the structural limitations of apparatus claim 1 are anticipated by Barratt ’470. Without such allegations, the Petitioner does not establish by a preponderance of the evidence that Barratt ’470 anticipates the apparatus claims.

The Petition’s section for the “coupled to” limitation focuses more on a method than the recited apparatus and does not contain any explicit contention using the phrase “coupled to.” Pet. 47–48;¹⁵ *but see* Pet. Reply 15 (Petitioner arguing that the Petition’s assertion that Barratt necessarily includes a storage device was a contention that the entire limitation 1.C, including the “coupled to” aspect, is inherently disclosed). Rather, the Petition includes the assertion that the base station maintains values and that is an inherent disclosure of a storage device in the base station. *See id.* (“[T]he base station maintains various parameter values,” and “[t]hus, Barratt ’470 discloses that the base station necessarily includes a ‘profile parameter storage device’ for *storing* these parameter values *from one frame to next* for each signal of interest.”). The Petition does not explain with any specificity where in the overall base station (which

¹⁵ The Petition’s contention that “the Slot 0 processor 117.0 (‘profile parameter determiner’) is *coupled to* receive an initial burst of a first burst data signal transmitted to the base station,” pertains to a different limitation. Pet. 42 (emphasis added) (addressing limitation 1.A, “a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the receiving station,” Ex. 1001, 13:1–4).

Petitioner maps to the preamble’s “receiving station,” Pet. 41) there purportedly is a structure for storing both parameter values. Accordingly, we are unable to assess adequately any allegation in the Petition as to how Barratt ’470 purportedly discloses the claimed structural relationship of a storage device coupled to a determiner.

Relatedly, we determine that the Petition’s contention that the determiner (DSP 117) “maintains values associated with the signals received during that timeslot” is inadequate to demonstrate a disclosure of the “coupled to” relationship. *See* Pet. 42. Claim 1 recites an apparatus comprising two components: 1) a profile parameter determiner,” and 2) a profile parameter storage device coupled to said profile parameter determiner. Ex. 1001, 12:66–67, 13:1, 13:10–10–11. Petitioner’s contention that the determiner both determines and stores parameter values fails to address adequately the other recited structure of a storage device. And, for the reasons discussed above, we do not adopt Petitioner’s proposed claim construction—offered in the Reply Brief after Patent Owner pointed out flaws in the Petition—where a component (the purported determiner) can be said to be coupled to a previously unidentified subcomponent (a purported memory device internal to the determiner). *See supra* Section II.C.2.

Additionally, apparatus claim 1 calls for the storage device to be “for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter.” Ex. 1001, 13:11–14. As discussed above in the claim construction section, this means a meaning a single *device* for storing both types of parameter values, although such a device may be comprised of multiple memory *components*. *See supra* Section II.C.3. Even if it is true that the parameter values are stored

somewhere in the base station of Barratt '470, as Petitioner contends, Petitioner does not discuss where specifically each of the two parameter values are stored and has not established by a preponderance of the evidence that the two values are stored in the same storage device, as is required by claim 1. *See* Pet. 47–48 (citing, *inter alia*, Ex. 1003 ¶ 145); *see also* Ex. 1003 ¶ 145 (Dr. van der Weide stating that the values are stored and offering the conclusory opinion that: “Thus, Barratt '470 discloses that the base station necessarily includes a ‘profile parameter storage device’ for *storing* these parameter values from one frame to next for each signal of interest, as required by Claim [1.C].”).

We determine that the Petition fails to establish a *prima facie* case of anticipation of apparatus claim 1 or of its dependent claims 3–6, 8–10, 13, and 15.

Patent Owner argues that “because Petitioners were required—but failed—to allege how Barratt '470 allegedly anticipates the ‘profile parameter storage device coupled to said profile parameter determiner’ and the ‘profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter’ in their Petition, Petitioners’ argument necessarily fails.” PO Resp. 45 (citing *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016); *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017)); *cf. id.* at 18 (Patent Owner arguing that a failure to allege in the Petition how Genossar allegedly anticipates the “coupled to” limitation cannot be cured in subsequent briefing). We find Patent Owner’s argument to be persuasive.

It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition

identify “with particularity” the “evidence that supports the grounds for the challenge to each claim.” . . . Unlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute. While the Board’s requirements are strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR.

Intelligent Bio-Sys., Inc., 821 F.3d at 1369 (quoting 35 U.S.C. § 312(a)(3)); *see also* 37 C.F.R. § 42.23(b) (“A reply may only respond to arguments raised in the corresponding opposition, patent owner preliminary response, patent owner response, or decision on institution.”); Consolidated Trial Practice Guide at 73 (“Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.”). In this case and as to this Ground, Petitioner’s failures at the Petition stage cannot be cured after Institution.

As mentioned, the Petition contends that the parameter values are maintained by the device mapped to the claimed determiner, namely the DSP, or are maintained somewhere in the base station of Barratt ’470. Pet. 42, 47. Petitioner, in reply to Patent Owner’s argument that the contentions in the Petition for the “coupled to” limitation fail to contain the phrase “coupled to,” argues that Patent Owner “misunderstands the nature of Petitioners’ articulated inherency argument.” Pet. Reply 15. According to Petitioner, when it argued that a storage device necessarily is present in Barratt ’470, it also meant that the “coupled to” relationship of limitation 1.C is inherently present. *See id.* at 15. Petitioner argues in the Reply Brief that, under its proposed claim construction of “coupled to,” the storage of parameter values is inherently disclosed and, therefore, a storage

device is inherently disclosed and, therefore, the structural relationship of a storage device coupled to a determiner is inherently disclosed. *See id.* at 15–16, 19 (“For the parameters from the ‘same signal on the previous frame’ to be used, they must be stored in a storage device.”). Petitioner, relying heavily on an exhibit entered at the time of the Reply Brief, also argues that the storage of the values in the DSP is inherently disclosed. *See id.* at 19 (citing Ex. 1042 (DSP56301 datasheet from the prosecution history of an apparently unrelated application); *see* Tr. 19:25–20:4 (Petitioner’s counsel: “Barratt only discloses one memory, and that’s the memory of the DSP, right? That DSP is the only component that’s disclosed as doing all of these functions. And so that is the only thing that you can look to, to see where these parameters are stored. So the parameters are necessarily going to be stored in the only place that is touching them, which is the DSP.”).

Petitioner also backs away from its original theory that the DSP is the claimed determiner and shifts to a new theory where the DSP is a controller with as described in the ’477 patent and has internal components that are coupled together. *See* Pet. Reply 17–18 (citing Exhibit 1042, 56 (the recently entered DSP56301 datasheet)); *see also* Tr. 18:3–4 (Petitioner’s counsel: “So the DSP is both—is the equivalent to the controller of the ’477 patent.”).

Rather than explaining how the Petition established a prima facie case of anticipation, Petitioner’s Reply Brief injects untimely arguments either to attempt to patch holes in the prima facie case or to shift to new theories. We do not consider such untimely arguments. *See, e.g., Wasica Fin. GmbH*, 853 F.3d at 1286–87 (“Rather than explaining how its original petition was correct, Continental’s subsequent arguments amount to an entirely new

theory of prima facie obviousness absent from the petition. Shifting arguments in this fashion is foreclosed by statute, our precedent, and Board guidelines.”); 37 C.F.R. § 42.23(b); Consolidated Trial Practice Guide at 73. However, even if we would consider those untimely arguments, Petitioner still fails to meet its burden of proving anticipation by a preponderance of the evidence.

Petitioner attempts to leverage its proposed claim constructions in arguing that limitation 1.C is inherently disclosed, and implicitly argues that the lack of specificity in the Petition is acceptable. In particular, Petitioner argues in the Reply Brief that “[t]here is no arrangement of the profile parameter storage device of Barratt ’470 and the profile parameter determiner of Barratt ’470 that would not meet the claim limitation of joined or connected in any way, because the profile parameter storage device must be coupled to the determiner in some way in order to obtain the values from the determiner in some way.” Pet. Reply 15–16. Petitioner, as it did for the Genossar ground, also argues that “[t]he plain and ordinary meaning of ‘coupled to’ would also encompass the connection if the storage device was a subcomponent of the profile parameter determiner.” *Id.* at 16. Petitioner additionally argues that “[a] proper construction of [the “storage device”] claim limitation encompasses storage in any location or combination of locations, so long as the parameters stored therein are available to the profile parameter determiner by a functional coupling.” *Id.* at 19; *see also id.* at 16 (Petitioner arguing that even if the values are stored in two different memory components or a subcomponent of the determiner, the limitation would be anticipated).

For the reasons set forth above in the claim construction section, we disagree with Petitioner’s overly broad view of the recited “coupled to” structural arrangement. *See supra* Section II.C.2. And, we determine that whether memory components constitute a single “profile parameter storage device” for holding the two types of parameter values is an issue of fact, not claim construction. *See supra* Section II.C.3. As Patent Owner argues, the two parameters could be stored in two different places, rather than a storage device for storing both types, or could be stored in the cloud and not on the claimed profile-creating apparatus (the overall claimed invention as recited in the preamble), or could be stored inside the determiner itself rather than in a profile parameter storage device coupled to that determiner, as claimed. *See* PO Resp. 43; PO Sur-reply 17. Thus, contrary to Petitioner’s arguments, not every possible structural arrangement necessarily satisfies the subject limitation.

Additionally, and assuming *arguendo* that the parameter values are stored between iterative passes in the method of Barratt ’470, Petitioner has failed to adequately show that the values are stored in the DSP, as Petitioner asserts. *See* Pet. 42–43 (citing Ex. 1007, 8:36–61, 16:17–17:7, 24:24–48; Ex. 1003 ¶¶ 135–136); Pet. Reply 16 (citing the same and Ex. 1003 ¶ 172), 19 (citing Ex. 1039 ¶ 31). Dr. van der Weide’s opinion that “[e]ach DSP 117 maintains values associated with the signals received during that timeslot” is too conclusory to support a finding in Petitioner’s favor. *See* Ex. 1003 ¶ 135; *see also id.* ¶ 172 (same). In a Supplemental Declaration filed with the Reply Brief, Dr. van der Weide’s opinion is equally conclusory. Ex. 1039 ¶ 31 (“As discussed above in Section VI, a Motorola DSP56301 maintains the at-issue values, and the memory components thereof, which

correspond with the claimed profile parameter storage device, would inherently store ‘the at least one signal-related parameter and the at least one channel-related parameter.’”), ¶¶ 25–29 (Section VI of the Supplemental Declaration with the conclusory assertion at paragraph 29: “The memory components of the Motorola Inc. DSP56301 would have ‘maintained’ the at-issue values.”). We observe that Dr. van der Weide asserts: “I note that *Barratt ’470* states that a Motorola Inc., DSP56301 ‘maintains values associated with the signals received during that timeslot, including: an initial weight matrix, frequency offset, and time alignment parameters.’” Ex. 1039 ¶ 26 (citing Ex. 1007, 8:36–61, 16:17–17:7, 24:24–28) (emphasis added). We are unable to find that quoted statement in the cited portions of *Barratt ’470*, but do find it on page 42 of the Petition and in paragraph 135 of Dr. van der Weide’s first declaration (Ex. 1003). This attribution—with the use of quotation marks—of this key proposition of Petitioner’s argument to *Barratt ’470* damages Dr. van der Weide’s credibility. And, neither Dr. van der Weide nor Petitioner explains adequately, and we are unable to discern, how the portions of *Barratt ’470* in the long string citation support Petitioner’s proposition that the DSP stores the values.

Additionally, even if the parameter values are stored in the DSP, Petitioner does not allege adequately or prove that the two types of values are stored in the same profile storage device. *See* Pet. 47–48; Pet. Reply 16–19. In the Reply Brief and with reliance on the late-entered DSP56301 datasheet, Petitioner asserts that “[t]he memory *components* of DSP 117 would inherently store ‘the at least one signal-related parameter and the at least one channel-related parameter.’” Pet. Reply 19 (emphasis added). However, Petitioner also asserts that the DSP contains multiple memory

components, including “a ‘Memory Expansion Area’ with a ‘Program RAM . . . & Instruction-Cache’, an ‘X Memory RAM’ and a ‘Y Memory RAM.’” *Id.* at 17 (citing Ex. 1042, 56). Petitioner does not identify which memory component or components purportedly hold each of the values and neither alleges nor directs us to any evidence that all of the various memory components in a DSP collectively would be considered by a person of ordinary skill in the art to be a single “profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter,” as recited in claim 1.

Petitioner argues that “Patent Owner’s own expert has stated that a profile parameter storage device comprised of multiple components satisfies this limitation.” Pet. Reply 16 (citing Ex. 1037 ¶¶ 212–214, 373). This is not helpful to Petitioner. That a storage *device* may be comprised of multiple memory *components* does not mean that multiple memory components necessarily would be considered to be a single memory device by one of ordinary skill in the art. We do not agree with Petitioner’s implied argument that “[e]ven if, as alleged by Patent Owner, Barratt ’470 stored the at-issue values in two separate memory components” that would constitute an inherent disclosure of storing them both in a single memory device, Pet. Reply 16, or the explicit argument that “[a] proper construction of this claim limitation encompasses storage in any location or combination of locations, so long as the parameters stored therein are available to the profile parameter determiner by a functional coupling,” *id.* at 19.

We determine that Petitioner did not, in the Petition, establish by a preponderance of the evidence that Barratt ’470 discloses “a profile parameter storage device coupled to said profile parameter determiner” or

“said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter,” and we also determine that Petitioner has not met that burden even if we consider the untimely arguments in the Reply Brief.

In conclusion, we determine that Petitioner has *not* shown by a preponderance of the evidence that independent apparatus claim 1 is anticipated by Barratt ’470. The remaining apparatus claims challenged in this ground depend directly or indirectly from claim 1. Petitioner’s challenges to those dependent claims do not cure the defects regarding independent claim 1. *See* Pet. 49–58. Accordingly, Petitioner also has *not* shown that dependent claims 3–6, 8–10, 13, and 15 are anticipated by Barratt ’470.

*G. The Alleged Obviousness of Claims 7, 11, and 12
over Barratt ’470 and Barratt ’490 (Ground 4)*

Petitioner alleges that claims 7, 11, and 12 of the ’477 patent would have been obvious over Barratt ’470 and Barratt ’490. *See* Pet. 59–65. This ground challenges only dependent apparatus claims. *See id.* Petitioner’s challenge to those dependent claims does not cure the flaws in the underlying ground alleging anticipation of independent apparatus claim 1. *See id.* Accordingly, Petitioner has not demonstrated by a preponderance of the evidence that apparatus claims 7, 11, and 12 would have been obvious over the combination of Barratt ’470 and Barratt ’490.

*H. The Alleged Obviousness of Claims 2, 14, and 18 over
Barratt ’470 and PHS (Ground 5)*

Petitioner alleges that claims 2, 14, and 18 of the ’477 patent would have been obvious over Barratt ’470 and PHS. *See* Pet. 65–68.

In this ground, challenged claims 2 and 14 are dependent apparatus

claims. Petitioner's challenge to those dependent claims does not cure the flaws in the underlying ground alleging anticipation of independent apparatus claim 1. *See id.* Accordingly, Petitioner has not demonstrated by a preponderance of the evidence that apparatus claims 2 and 14 would have been obvious over Barratt '470 and PHS.

Dependent method claim 18, which is not the subject of Patent Owner's disclaimer, recites:

The method of claim 16 wherein the receiving station is operable in a communication system in which communication protocols include a contention period and wherein the initial burst of the first burst data signal responsive to which *the at least one signal-related parameter and the at least one channel-related parameter* are determined is transmitted to the receiving station during the contention period.

Ex. 1001, 14:51–57 (emphasis added). The emphasized language finds antecedent basis in the independent claim, with dependent claim 18 referring back to the same signal-related and channel-related parameters recited in independent method claim 16. In its mapping in the Petition of those parameters for the independent claims, Petitioner contends that “Barratt '470 discloses “determining at least one signal-related parameter (*e.g., frequency offset, time alignment, etc.*)” and “determining a value of at least one channel-related parameter (*e.g., antenna weights*).” Pet. 46. For dependent claim 18, the Petition does not refer to those same parameters, but rather sets out contentions using the parameters of frequency and timeslot. *See id.* at 68 (relying on the contentions made for claim 2); *id.* at 67 (Petitioner contending, for claim 2, that “the initial burst is used by the base station to determine the at least one parameter for the first burst data signal, including the ‘*frequency*’ and ‘*timeslot*’ of the SCH channel and other parameters described in the PHS standard.”). Petitioner, at oral argument, conceded that

the parameters identified in the Petition for the independent claim are different than those identified for dependent claim 18. Tr. 41:6–20.

The Petition’s inconsistent contentions for the dependent claim and the underlying independent claim were identified in the institution decision and reiterated in the Patent Owner Response. *See* Paper 12, 46–47; PO Resp. 48–49. In the Reply, Petitioner does not attempt to reconcile the inconsistency but argues that the frequency and timeslot parameters relied on for dependent claim 18 are signal-related and channel-related parameters, respectively. Pet. Reply 22. Petitioner’s Reply Brief arguments are not on point. Dependent claim 18 does not simply recite a limitation involving at least one signal-related parameter and at least one channel-related parameter two types of parameters. Rather, it is drafted using the term “the” to modify the parameters—“*the* at least one signal-related parameter and *the* at least one channel-related parameter.” Ex. 1001, 14:55–56 (emphasis added). Accordingly, Petitioner needed to, but did not, address claim 18 using the same two parameters that it used for the independent claim. Because of the inconsistent mapping, Petitioner fails to set forth contentions as to the unpatentability of dependent claim 18 when the same two parameters of the independent claim are implicated.

Also in the Reply Brief, Petitioner argues that, “[f]urther, based on these disclosures [of Barratt ’470 and PHS], it would also be obvious to one of skill in the art that additional signal-related and channel-related parameters and additional signal-related and channel-related parameters could be exchanged during this period.” Pet. Reply 22. We understand Petitioner to have argued at the hearing that the Petition, for claim 18, was merely mapping certain parameters as examples, and implied that it had

argued in the Petition that other parameters of *Barratt* '470 would have been obvious. *See* Tr. 40:14–41:5. This is a new theory made after the Board and Patent Owner pointed out a flaw in the Petition, and we do not consider it. *See* Pet. 67–68 (The Petition referring to “the ‘*frequency*’ and ‘*timeslot*’ of the SCH channel and other parameters described in the PHS standard,” not additional parameters of *Barratt* '470, and not mentioning the specific parameters utilized in the independent claim).

Petitioner has not demonstrated by a preponderance of the evidence that dependent method claim 18 would have been obvious over *Barratt* '470 and PHS.

III. CONCLUSION

Petitioner has *not* shown by a preponderance of the evidence that claims 1–15 and 18 of the '477 patent are unpatentable.

In summary:

Claim(s)¹⁶	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1, 3–5, 8, 9, 13, 15	102	Genossar		1, 3–5, 8, 9, 13, 15
2, 10–12, 14, 18	103	Genossar, WiMAX		2, 10–12, 14, 18
1, 3–6, 8–10, 13, 15	102	<i>Barratt</i> '470		1, 3–6, 8–10, 13, 15
7, 11, 12	103	<i>Barratt</i> '470, <i>Barratt</i> '490		7, 11, 12
2, 14, 18	103	<i>Barratt</i> '470, PHS		2, 14, 18
Overall Outcome				1–15, 18

¹⁶ The originally-challenged claims that have been disclaimed are omitted from the table. *See* Ex. 2007 (disclaiming claims 16, 17, 19, and 20).

IV. ORDER

For the foregoing reasons, it is

ORDERED that claims 1–15 and 18 of the '477 patent have *not* been proven to be 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.

IPR2023-01416
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