

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.

IPR2023-01415
Patent 7,099,383 B2

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

BARRETT, *Administrative Patent Judge*.

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

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. 7,099,383 B2 (“the ’383 patent,” Ex. 1001). Paper 1 (“Pet.”). The Petition challenges the patentability of claims 1–17 of the ’383 patent. General Access Solutions, Ltd. (“Patent Owner”)² filed a Preliminary Response to the Petition. Paper 8 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply to the Preliminary Response (Paper 10, “Pet. Prelim. Reply”) and Patent Owner filed a Sur-reply (Paper 11, “PO Prelim. Sur-reply”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on at least one of the challenged claims of the ’383 patent. Accordingly, we do not institute an *inter partes* review of the challenged claims.

¹ Petitioner identifies Nokia of America Corporation, Ericsson Inc., and T-Mobile USA, Inc. as real parties-in-interest. Pet. 82.

² Patent Owner identifies General Access Solutions, Ltd. as the real party-in-interest. Paper 7, 1.

B. Related Proceedings

Both parties identify, as a matter involving or related to the '383 patent, *General Access Solutions, Ltd. v. T-Mobile USA, Inc.*, No. 2:23-cv-00158-JRG (E.D. Tex.). Pet. 82; Paper 7, 1.

C. The '383 Patent

The '383 patent pertains, “in general, to communication network access systems and, more specifically, to an apparatus for processing data signals received from wireless subscriber stations.” Ex. 1001, 3:30–33.

Figure 1 of the '383 patent is reproduced below.

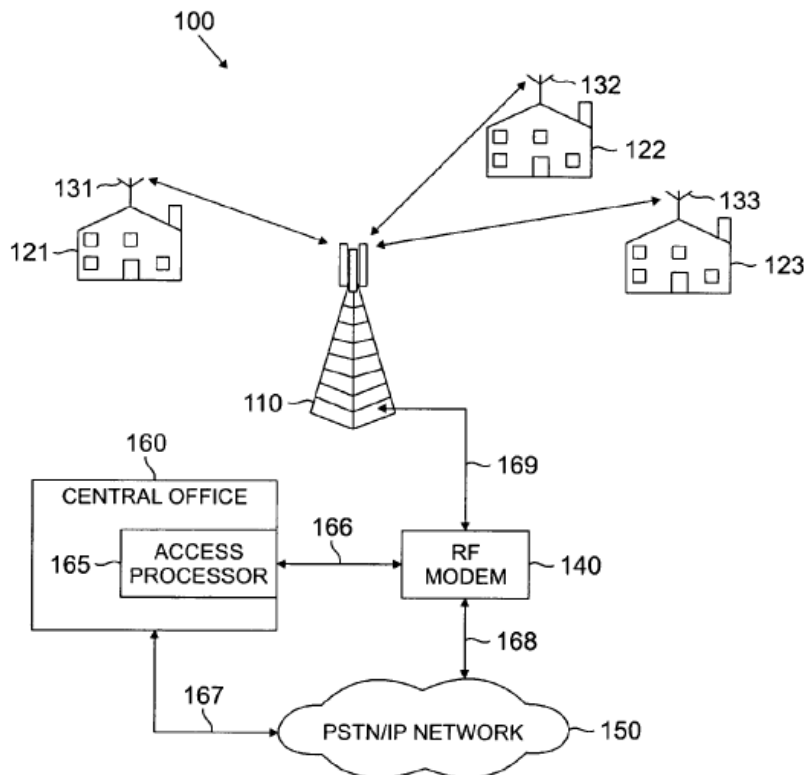


FIG. 1

Figure 1 “illustrates an exemplary fixed wireless access network 100.” *Id.* at 8:28–29. Transceiver base station 110 “transmit[s] forward channel (i.e., downlink or downstream) broadband signals to a plurality of subscriber

premises, including exemplary subscriber premises 121, 122 and 123, and receive reverse channel (i.e., uplink or upstream) broadband signals from the plurality of subscriber premises.” *Id.* at 8:30–37.

Figure 3 of the '383 patent is reproduced below.

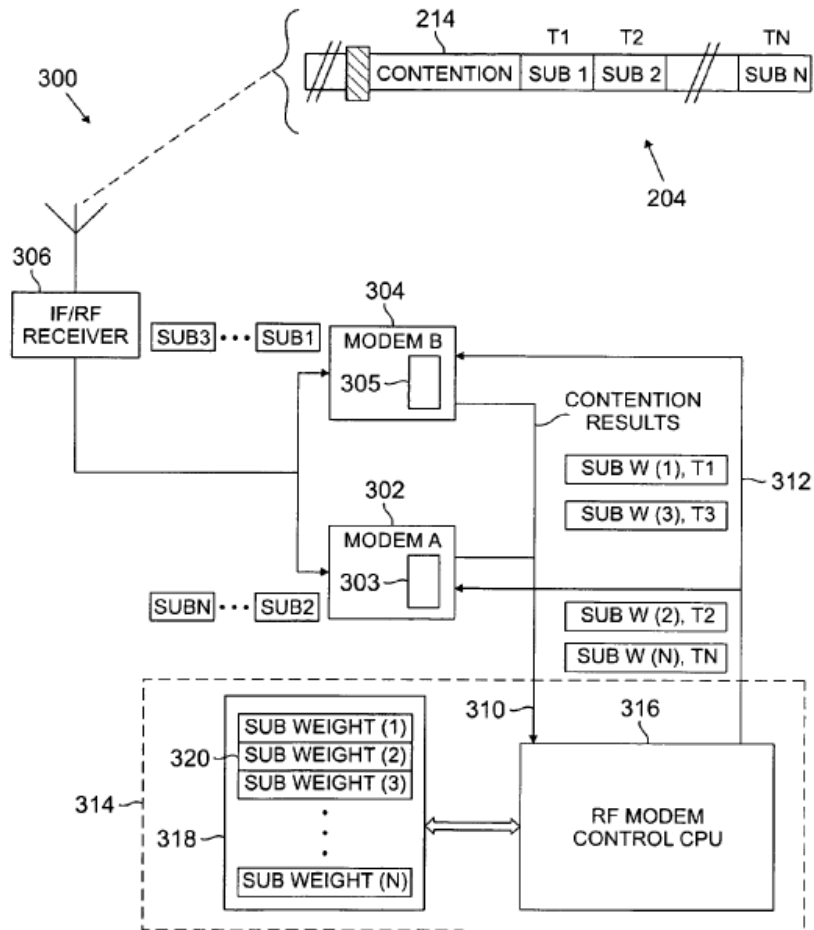


FIG. 3

Figure 3 depicts a functional block diagram of a portion of the disclosed system comprising two modems and a controller. *Id.* at 10:34–36. Shown, at the top of Figure 3, is uplink portion 204 of a time division duplex (TDD) data frame, with bursts of data sub 1, sub 2 . . . sub N. *See id.* at 9:63–67, 10:44–45.

Modem 302 and modem 304 are selectively coupled to receive uplink signals sent by different ones of subscriber stations to

the base station (not shown). Here, IF/RF (intermediate frequency/radio frequency) receive circuitry 306 of the base station is shown to pass the uplink signals to the modems. Circuitry 306 is operable to down-convert in frequency uplink signals received from receive circuitry 304. Thereafter, the down-converted signals, bursts sub3 . . . sub1 and bursts subN . . . sub2 are operated upon by modems 304 and 302 respectively. The 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. Controller 314 includes control CPU 316 and memory device 318.

Id. at 10:36–51. “Control CPU 316 is operable, amongst other things, to perform queue management, scheduling operations, as well as to exert control over operation of modems 302 and 304.” *Id.* at 10:52–54.

“Profiles . . . are created and maintained by controller 314 in a memory such as memory device 318.” *Id.* at 10:55–56. “The profiles include values which represent channel characteristics upon which uplink signals are transmitted as well as characteristics of the uplink signals,” and “are stored at memory device 318 and are updated as conditions warrant.” *Id.* at 10:56–61.

According to the '383 patent:

By utilizing at least two separate modems, alternating ones of the modems are utilized to demodulate successive bursts of data. During a time period in which a demodulator is not being utilized to operate upon a data burst, values associated with another channel upon which a subsequent data burst is expected to be transmitted is applied to the unused modem. Thereby, when the subsequent burst of data is received at the base station the modem is primed to operate upon the burst of the uplink data signal.

Id. at 12:3–11.

D. Illustrative Claim

Of the challenged claims of the '383 patent, claims 1, 4, 5, and 16 are independent claims. Claim 1, reproduced below with bracketed annotations³ inserted, is illustrative.

1. [Pre] An apparatus for a communication station operable in a wireless communication system at least to receive first and second data signals successively transmitted thereto by a first subscriber station and a second subscriber station, respectively, within a plurality of subscriber stations, the apparatus comprising:

[1.1.1] a first demodulator selectably coupled to receive the first data signals transmitted to the communication station;

[1.1.2] at least a second demodulator also selectably coupled to receive the second data signals transmitted to the communication station; and

[1.2] a controller, coupled to the first demodulator and to the at least second demodulator in a feedback arrangement, the controller alternately selecting the first data signals for application to the first demodulator and the second data signals for application to the second demodulator,

[1.3] wherein the at least the second subscriber station comprises a plurality of subscriber stations and [1.4] wherein the controller selectively applies the first and second data signals to the first and second demodulators according to a selected pattern by alternately coupling the first demodulator and the second demodulator to receive, selectably, the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations.

Ex. 1001, 12:46–13:3.

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

E. Evidence

Petitioner relies on the following references:

Name	Reference	Exhibit No.
Uhlik	US 7,430,197 B1; issued Sept. 30, 2008	1005
Barratt '470	US 5,909,470; issued June 1, 1999	1006
Barratt '490	US 5,592,490; issued Jan. 7, 1997	1007

Petitioner also relies on the Declaration of Daniel van der Weide, Ph.D. (Ex. 1003) in support of its arguments.

F. Asserted Grounds of Unpatentability

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

Claim(s) Challenged	35 U.S.C. § ⁴	Reference(s)/Basis
1–3, 5–11, 13–17	102	Barratt '470
4	103	Barratt '470
12	103	Barratt '470, Barratt '490
1–10, 13, 16, 17	102	Uhlik
11, 12, 14, 15	103	Uhlik

II. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a)—*FINTIV*

Patent Owner argues that, in view of the parallel litigation in Texas, the Board should discretionarily deny institution of an *inter partes* review under 35 U.S.C. § 314(a) pursuant to *Fintiv*. Prelim. Resp. 38–40; *see Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (setting out six nonexclusive factors that the Board may

⁴ The application that issued as the '383 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.

consider in determining whether to deny institution because of a parallel district-court proceeding). Because, for the reasons discussed below, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on at least one of the challenged claims and we therefore deny institution on that basis, we do not reach Patent Owner’s arguments for discretionary denial.

III. 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).

“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, 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.⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

⁵ The parties have not directed our attention to any objective evidence of obviousness or non-obviousness.

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 person of ordinary skill in the art:

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.

Pet. 5 (citing Ex. 1003 ¶ 34). Patent Owner states that, “[f]or purposes of this Preliminary Response only, Patent Owner does not dispute the Petitioners’ definition of a person of ordinary skill in the art.” Prelim. Resp. 2.

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).

Petitioner does not propose an explicit claim construction for any term, asserting that, “[u]nless otherwise specified, the terms should receive their respective plain and ordinary meaning as understood by a person of ordinary skill in the art.” Pet. 6. Patent Owner argues that “nowhere else do Petitioners even mention claim construction, much less provide a proposed construction for any term of the ’383 patent.” Prelim. Resp. 12. Rather, according to Patent Owner, “the Petition repeatedly cites to Patent Owner’s infringement contentions from a related district court proceeding to set forth what Petitioner then intuitively Patent Owner’s constructions for claim terms would be.” *Id.*; *see id.* at 16 (Patent Owner asserting that “[t]he Petition relies on citations to Patent Owner’s infringement contentions no less than 68 times for its challenge to all Challenged Claims, and for all Grounds.”). Patent Owner further argues that Petitioner does not indicate

whether it agrees with, proposes, or adopts the constructions attributed to Patent Owner, and therefore has failed to set forth how the challenged claims are to be construed, as required under 37 C.F.R. § 42.104(b)(3). *See id.* at 12–17.

For the reasons set forth below, we determine that Petitioner has not met its burden on its challenges as articulated by Petitioner. We need not reach any claim construction issues to make that determination. Accordingly, on this record and for purposes of this decision, we determine that no claim terms require express construction.

*D. The Alleged Anticipation of Claims 1–3, 5–11, and 13–17
by Barratt ’470 (Ground 1)*

Petitioner alleges that claims 1–3, 5–11, and 13–17 of the ’383 patent are anticipated by Barrett ’470. *See* Pet. 17–26 (addressing claim 1).

1. Barratt ’470 (Ex. 1006)

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. 1006, 1:19–24.

Barratt ’470 discloses 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.

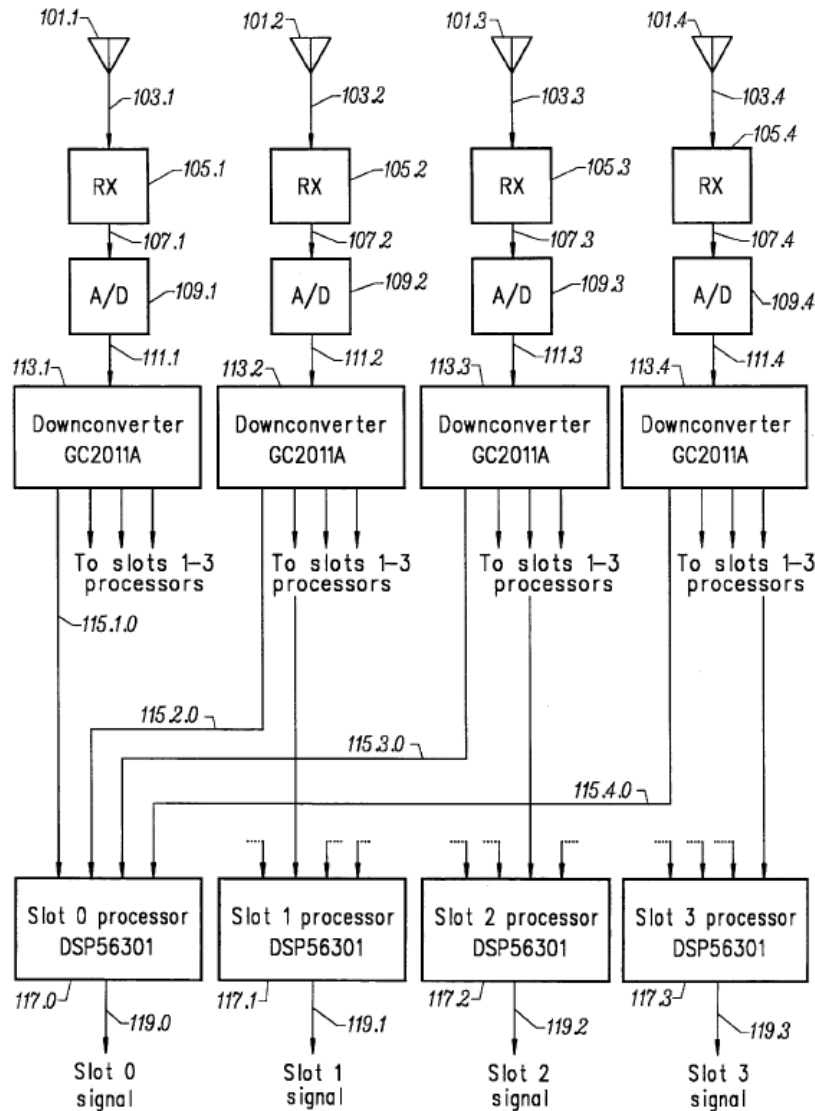


FIG. 1

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.

As to the filters, Barratt ’470 explains:

In the preferred embodiment, GrayChip Inc. GC2011A digital filter 113.1, . . . , 113.m devices are used, one for each antenna output, to implement the downconverting and the digital filtering, the latter using finite impulse response (FIR) filtering techniques. Determining the appropriate FIR filter coefficients is done using standard techniques as would be clear to a person of ordinary skill in the art.

There are four downconverted outputs from each antenna’s GC2011A digital filter device 113, one per time slot. For 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 9:53–65 (ellipsis in original); *see also id.* at 24:10–12 (“The downconverters also carry out the time demultiplexing to produce four outputs.”).

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.

2. *The Alleged Anticipation of Independent Claim 1 by Barratt ’470*

For reasons discussed below, Petitioner has not shown a reasonable likelihood that it would prevail in establishing that Barratt ’470 anticipates independent claim 1.

Patent Owner's arguments against Petitioner's challenge pertain to the recited "controller" of independent claim 1. *See* Prelim. Resp. 17–28.

Element 1.2 recites:

a controller, coupled to the first demodulator and to the at least second demodulator in a feedback arrangement, the controller alternately selecting the first data signals for application to the first demodulator and the second data signals for application to the second demodulator,

Ex. 1001, 12:57–61 (emphasis added). Element 1.4 recites:

wherein the controller selectively applies the first and second data signals to the first and second demodulators according to a selected pattern by alternately coupling the first demodulator and the second demodulator to receive, selectably, the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations.

Id. at 12:64–13:3 (emphasis added).

Patent Owner argues that "[d]espite the numerous requirements for the claimed controller, Petitioners acknowledge that Barratt '470 does not disclose a controller, such that Petitioners must rely on inherency to meet each element required of the claimed controller." *See* Prelim. Resp. 18 (citing Pet. 20). Patent Owner further argues that Petitioner has failed to meet its burden regarding inherency and that, "[w]hile it may be the case that Barratt '470 might include a controller, it is not the case that Barratt '470 necessarily includes a controller arranged in the same manner recited in the Challenged Claims." *Id.* at 19 (emphasis omitted) (citing *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010)). We find Patent Owner's arguments to be persuasive.

For element 1.2, Petitioner contends that "Barratt '470 discloses a wireless system containing at least one base station that performs various steps, such as those shown in FIG. 1 and FIGS. 4–7" and that "[t]he base

stations disclosed in Barratt '470 *necessarily* include a controller (e.g., processing unit) for controlling the operation and performance of these steps.” Pet. 20 (citing Ex. 1003 ¶ 62) (emphasis added). We agree with Patent Owner’s argument that Petitioner is relying on an inherency theory for the recited “controller.” In support of this inherency theory, Petitioner provides an annotated version of Figure 1 with, *inter alia*, red brackets and dashed lines around the four digital filters, and contends that the annotated figure “illustrates how a controller in the base station uses filter devices 113 (during each frame) to alternately select the first data signals received during Slot 0 for application to the *first* DSP 117.0 and the second data signals received during Slot 1 for application to the *second* DSP 117.1.” *Id.* at 20–21 (citing Ex. 1003 ¶ 62). However, we fail to see anything labeled as a controller in the figure, and Petitioner does not explain adequately how the figure purportedly “illustrates how a controller in the base station uses [the] filter devices.” *Id.* at 20. Petitioner’s contentions regarding the purported disclosure of a controller coupled to demodulators in a feedback arrangement, as recited in element 1.2, is similarly lacking an adequate explanation. Pet. 21–23 (Petitioner contending that an annotated Figure 6 illustrates “how the controller in the base station operates each of the DSPs ‘in a feedback arrangement,’” but not explaining with any specificity how any unshown controller relates to the feedback loop) (citing Ex. 1006, 16:32–17:7, 18:39–42; Ex. 1003 ¶¶ 63–64; Ex. 1008, 16–24.). Petitioner’s assertions that Barratt '470 necessarily includes a controller are too conclusory to establish a reasonable likelihood of prevailing on this anticipation challenge.

We find the cited testimony of Dr. Van der Weide’s regarding this inherency theory to be unhelpful. *See* Ex. 1003 ¶¶ 62–64. Almost all of that testimony repeats the conclusory assertions made in the Petition. *See id.* However, Dr. Van der Weide does additionally state that “[t]he base stations necessarily include a controller because processors (e.g., digital signal processors 117 [mapped to the recited demodulators]) require controller supervision.” *Id.* This is little more than a conclusory opinion that a base station must have some kind of a controller, but fails to meaningfully address the requirements of a controller arranged as in the claim. *Cf.* Pet. Prelim. Reply 1 (Petitioner parenthetically quoting the same sentence as support for the proposition that “it would strain credibility” to argue that a base station would not necessarily comprise a controller); PO Prelim. Sur-reply 2–3 (Patent Owner arguing that the issue is not whether a controller would be present in Barratt ’470, but whether Petitioner has shown that the reference necessarily discloses a controller arranged in the same manner as in the claim).

Additionally, even if the base station of Barratt ’470 necessarily includes a controller, Petitioner’s contentions are too ambiguous for us to be able to compare any such controller against the requirements of the recited controller. For example, it is not clear whether Petitioner contends that the four filters in Figure 1 together constitute the purported controller or merely are a portion of the controller, or whether the controller is separate device that merely uses the filters. *See* Pet. 20–21.

For element 1.4, which calls for the controller to selectively apply signals to demodulators, Petitioner contends that “Barratt ’470 discloses that for each TDD frame *the base station* applies the data signals [to two DSPs

(mapped to the recited demodulators)],” that this is done by “coupling” the DSPs to receive data signals, and that “Barratt ’470 discloses applying uplink data signals to the DSPs 117 ‘according to a selected pattern.’” *Id.* at 24–25 (citing, *inter alia*, Ex. 1002 ¶¶ 67–68) (emphasis added); *see also id.* at 25 (Petitioner contending that the “scheduling of radio resources (i.e., timeslots) *by the base station*” determines the order that signals are applied to each respective digital signal processor. (emphasis added)); *id.* at 26 (“Barratt ’470 discloses *a base station* which applies [signals to demodulators] by alternately coupling to [demodulators]” (emphasis added)). Petitioner’s contentions are not on point as they are in terms of the *base station* rather than a *controller*, as recited in the claims. Petitioner is, in effect, asserting that the selectively applying and alternately coupling functions are performed, but without identifying adequately what specific component constitutes a “controller” that performs the functions. It is not enough to assert that a base station would have a controller and that the certain recited functions are performed. Petitioner must, as Patent Owner argues (Prelim. Resp. 19), identify in Barratt ’470 a controller arranged in the same manner as in the challenged claims. Petitioner has not done so.

We determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to independent claim 1 as anticipated by Barratt ’470.

3. *The Alleged Anticipation of Independent Claim 5 by Barratt ’470*

Claim 5 recites a “controller” limitation similar to that of independent claim 1. *See* Ex. 1001, 13:57–61 (element 5.2). For that limitation of claim 5, Petitioner relies on its contentions made for the corresponding limitation of claim 1. *See* Pet. 29. For the reasons indicated above, those

contentions fail to establish a reasonable likelihood of prevailing on this anticipation challenge.

Additionally, claim 5 recites that the “the controller further comprises a memory portion,” and calls for profiles to be stored at that memory portion of the controller. Ex. 1001, 13:62–67 (element 5.3). In this regard, Petitioner contends that “Barratt ’470 discloses base stations that *necessarily* comprise ‘memory portions,’ which may be included within the base station’s ‘controller’ *or other parts of the base station.*” Pet. 29 (citing Ex. 1003 ¶ 78) (emphasis added). We agree with Patent Owner’s argument that Petitioner is relying on inherency for this memory element, and that Petitioner’s contention (even if correct) is an acknowledgement the memory may be included in parts of the base station other than the controller. *See* Prelim. Resp. 29. Accordingly, we determine that Petitioner has failed to show a reasonable likelihood in demonstrating that Barratt ’470 inherently discloses the recited controller that comprises a memory portion.

We determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to independent claim 5 as anticipated by Barratt ’470.

4. The Alleged Anticipation of Independent Claim 16 by Barratt ’470

The last element of independent claim 16 recites:

maintaining profiles associated with each of the first and at least second data signals transmitted upon the first and at least second channels, respectively, *and wherein the operations of demodulating further comprise accessing the profiles.*

Ex. 1001, 16:1–5 (element 16.2) (emphasis added). Although Petitioner treats this as a single element, it contains two steps: the step of maintaining

profiles, and the additional step, within the demodulating operations, of accessing the profiles.

Petitioner contends that “Barratt ’470 discloses [16.2] for the reasons discussed for [5.3].” Pet. 42 (citing Pet. § VIII.A [5.3]; Ex. 1003 ¶ 95; Ex. 1008, 111 (Patent Owner’s infringement contentions)) (bracketed element numbers in original). As mentioned above, element 5.3 recites that the “the controller further comprises a memory portion” where profiles are stored, Ex. 1001, 13:62–67, and we determine that Petitioner has failed to adequately show that the recited controller comprising a memory portion is disclosed by Barratt ’470. *See supra* Section III.D.3; *cf.* Prelim. Resp. 26, 29–30 (Patent Owner noting that Petitioner, for claim 16, relies on its inadequate analysis for controller elements 1.2 and 5.3); Pet. 42 (Petitioner, for claim 16, relying on its reasoning for elements 1.2 and 5.3). That element 5.3 of apparatus claim 5, unlike method claim 16, does not recite a step “wherein the operations of demodulating further comprise accessing the profiles.” Similarly, Petitioner’s contentions for element 5.3 do not address explicitly that requirement of claim 16. *See* Pet. 29–30. Accordingly, we are unable to assess Petitioner’s contentions (if any) as to how Barratt ’470 discloses that step. We determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to independent claim 16 as anticipated by Barratt ’470.

5. The Alleged Anticipation of Dependent Claims 2, 3, 6–11, 13–15, and 17 by Barratt ’470

The remaining claims subject to this ground, claims 2, 3, 6–11, 13–15, and 17, each depends directly or indirectly from one of the independent claims discussed above. Petitioner’s arguments against these claims rely on the same contentions discussed above regarding anticipation of the

respective underlying independent claim by Barratt '470. *See* Pet. 26–28, 30–41, 43. Thus, for the same reasons discussed above, Petitioner has not shown a reasonable likelihood of prevailing in showing that claims 2, 3, 6–11, 13–15, and 17 are anticipated by Barratt '470.

E. The Alleged Obviousness of Claim 4 Over Barratt '470 (Ground 2)

Petitioner alleges that independent claim 4 would have been obvious over Barratt '470. *See* Pet. 43–46; *see id.* at 43–46 (contending that element 4.3 would have been obvious). For reasons discussed below, Petitioner has not shown a reasonable likelihood that it would prevail in establishing that independent claim 4 would have been obvious over Barratt '470.

Claim 4 recites “controller” limitations similar to or the same as that of independent claim 1. *See* Ex. 1001, 13:26–30, 13:38–45 (elements 4.2 and 4.5). For those limitations of claim 4, Petitioner relies on its contentions made for the corresponding limitations of claim 1. *See* Pet. 44, 46 (Petitioner contending that Barratt '470 *discloses* elements 4.2 and 4.5); Prelim. Resp. 18–28 (Patent Owner arguing that Petitioner does not show that Barratt '470 discloses a controller as recited in claim 4). For the reasons indicated above, we determine that Petitioner fails to establish a reasonable likelihood of proving those contentions to be correct. Accordingly, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge alleging that independent claim 4 would have been obvious over Barratt '470.

F. The Alleged Obviousness of Dependent Claim 12 Over Barratt '470 and Barratt '490 (Ground 3)

Petitioner alleges that dependent claim 12 would have been obvious over Barratt '470 and Barratt '490. Pet. 46–49. Claim 12 depends indirectly from independent claim 5. Petitioner relies on the secondary reference, Barratt '490, for the forward error correction aspects of claim 12. *See* Pet. 49. Petitioner's challenge to this claim relies on the same unpersuasive "controller" contentions discussed above regarding the alleged anticipation of independent claim 5 by Barratt '470. *See id.* at 46–49. Thus, for the same reasons discussed above, Petitioner has not shown a reasonable likelihood of prevailing in showing that claim 12 would have been obvious over Barratt '470 and Barratt '490.

G. The Alleged Anticipation of Claims 1–10, 13, 16, and 17 by Uhlik (Ground 4)

Petitioner alleges that claims 1–10, 13, 16, and 17 of the '383 patent are anticipated by Uhlik. *See* Pet. 50–74 (addressing claim 1). Patent Owner argues that the Petition improperly relies on separate embodiments in Uhlik that are not arranged or combined as in the challenged claims. *See* Pet. Prelim. Resp. 30–38; PO Prelim. Sur-reply 3–5.

1. Uhlik (Ex. 1005)

Uhlik pertains to "radio communications systems in which several remote terminals communicate voice or data with several different base stations and, in particular, to such a system in which the base stations share a broadcast channel with the other base stations." Ex. 1005, 1:7–11.

Uhlik's Figure 4 is reproduced below.

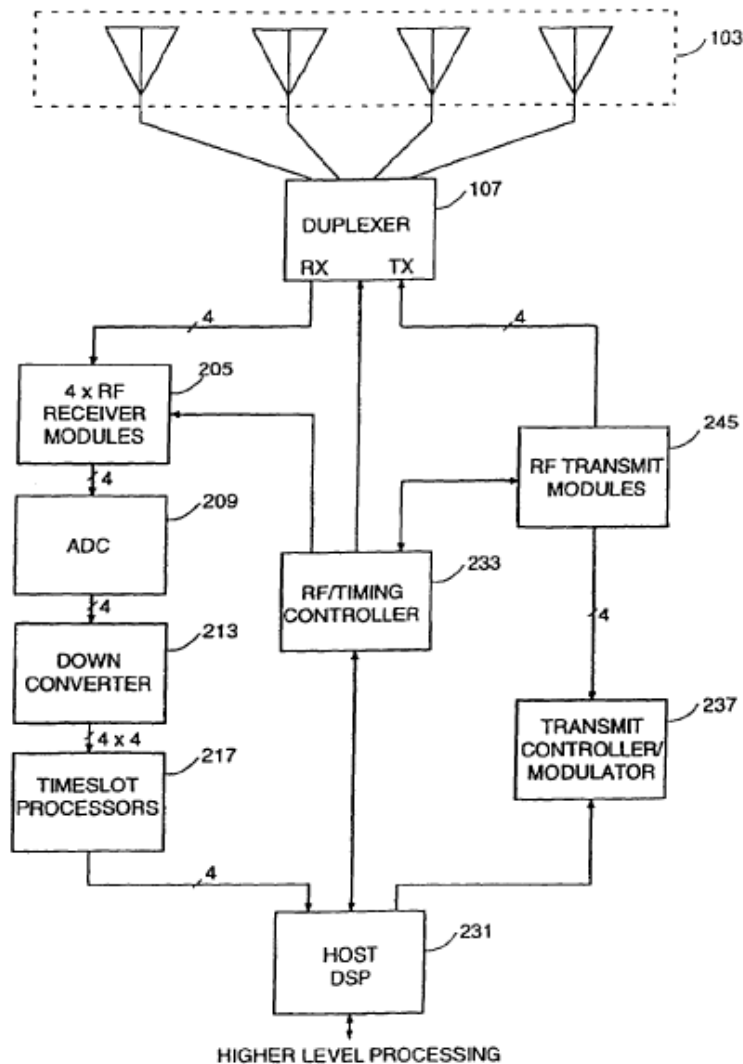


Figure 4

Figure 4 depicts a simplified block diagram of a base station on which Uhlik's system and method may be implemented. *Id.* at 2:30–33. Uhlik explains:

There are, in the present example, four down-converted outputs from each antenna's GC2011 digital filter device 213, one per receive timeslot. The particular number of timeslots can be varied to suit network needs. . . . [T]he present example uses four uplink and four downlink timeslots for each TDD frame For each of the four receive timeslots, the four

down converted outputs from the four antennas are fed to a digital signal processor (DSP) device 217 (hereinafter “timeslot processor”) for further processing, including calibration, according to one aspect of this invention. Four Motorola DSP56303 DSPs can be used as timeslot processors, one per receive timeslot.

Id. at 5:58–6:4.

Uhlik further explains that “[t]he timeslot processors 217 perform several functions including the following: received signal power monitoring; frequency offset estimation and time alignment; *smart antenna processing including determining weights* for each antenna element to determine a signal from a particular remote user; and *demodulation of the determined signal.*” *Id.* at 6:5–10 (emphasis added). “The output of the timeslot processor 217 is demodulated burst data for each of the four receive timeslots.” *Id.* at 6:11–12. The demodulated burst data is sent to host DSP processor 231 “whose main function is to control all elements of the system and interface with the higher level processing.” *Id.* at 6:12–15.

2. *The Alleged Anticipation of Independent Claims 1, 4, and 5 by Uhlik*

For reasons discussed below, Petitioner has not shown a reasonable likelihood that it would prevail in establishing that Uhlik anticipates independent claims 1, 4, or 5.

In independent claim 1, element 1.2 recites, “*a controller, coupled to the first demodulator and to the at least second demodulator in a feedback arrangement, the controller alternately selecting the first data signals for application to the first demodulator and the second data signals for application to the second demodulator.*” Ex. 1001, 12:57–61 (emphasis added).

Petitioner contends that “Uhlik discloses that the four timeslot processors 217 (shown in Fig. 4 below in yellow) are coupled to a host DSP processor 231 (blue) ‘whose main function is to control all elements of the system,’” and that, “[t]hus, Uhlik discloses a host DSP processor (i.e., ‘controller’) whose functions include alternately selecting the data signals received during each timeslot for application to one of the four timeslot processors (i.e., ‘demodulators’).” Pet. 53–54 (citing Ex. 1005, 6:11–15; Ex. 1003 ¶ 119).

Petitioner’s annotated version of Uhlik’s Figure 4 is reproduced below.

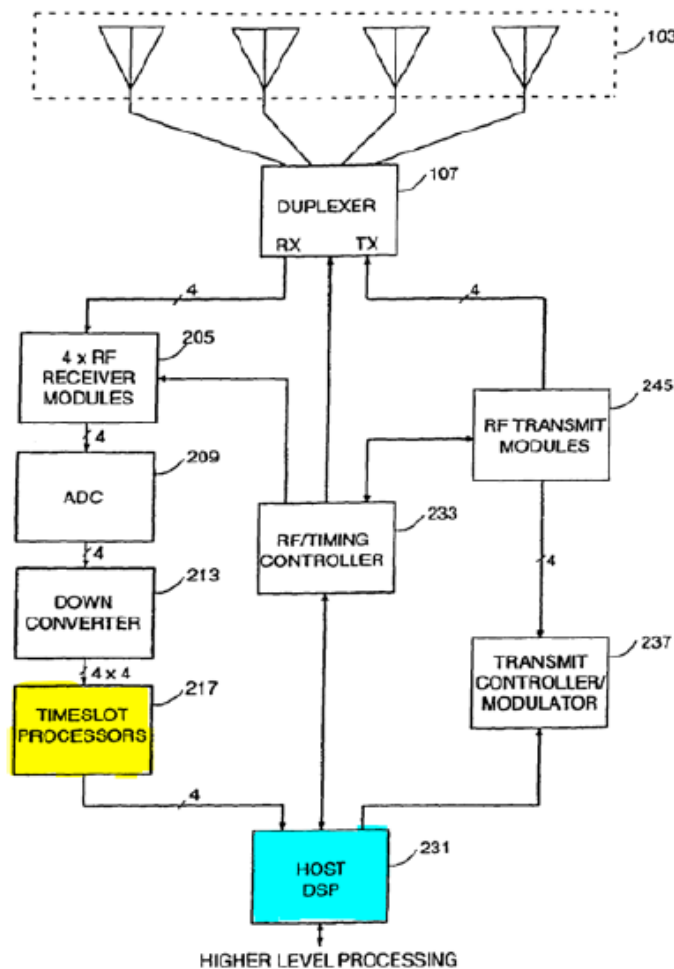


Figure 4

Pet. 55. Above is Uhlik's Figure 4, which depicts a simplified block diagram of a base station on which Uhlik's system may be implemented, Ex. 1005, 2:30–32, with Petitioner's annotations of timeslot processors 217 (mapped to the demodulators) in yellow and host DSP 231 (mapped to the controller) in blue.

For the recited aspect of the controller being coupled to the demodulators in a “feedback arrangement,” Petitioner contends:

Uhlik teaches that the base station “produces and maintains spatial signatures for each subscriber station,” including “spatial multiplexing and demultiplexing weights.” Ex. 1005, 3:1–27; Ex. 1003, ¶120. These “weights” and other location-related parameter estimates are passed to a “source tracker” whose function “is to keep track of the positions of each of the transmitters as a function of time.” Ex. 1005, 4:61–5:13; *see also id.*, 6:19–58; Ex. 1003, ¶120. Thus, Uhlik further discloses that the host processor (i.e., “controller”) is coupled to each timeslot processor (i.e., “demodulator”) in a feedback arrangement for processing additional, subsequent bursts received from the same subscriber station. Ex. 1003, ¶120; *see also* Ex. 1008, 16–24.

Pet. 54.

Patent Owner argues that Petitioner improperly “attempts to combine embodiments in its anticipation arguments,” asserting that Petitioner relies on Figure 4 and the descriptions of Figures 1 and 3 for this element 1.2. Prelim. Resp. 31–32. Patent Owner further argues that Figures 1 and 3 depict a Spatial Division Multiple Access signal processor (SDMAP) 48, whereas a SDMAP is not shown in Figure 4, and that “Uhlik describes Figure 4 as ‘an *alternative embodiment* of a wireless communications system suitable for implementing the present invention.’” *Id.* at 32–33 (citing Ex. 1005, 5:22–24). Thus, according to Patent Owner, “the Petition

cannot rely on Figure 4 for some claim elements and Figures 1 and/or 3 for other claim elements for anticipation.” *Id.* at 34.

Patent Owner, in particular, argues that, for element [1.2], “Petitioners relied on Uhlik’s description of ‘spatial multiplexing and demultiplexing weights’—contained in Uhlik’s description of the SDMAP of Figure 1—as well as using these weights ‘to keep track of the positions of each of the transmitters as a function of time’—contained in Uhlik’s description of Figure 3’s SDMAP—as allegedly disclosing the ‘feedback arrangement’ recited in claim element [1.2].” Prelim. Resp. 34 (citing Pet. 54; Ex. 1005, 3:1–27, 4:61–5:13) (bracketed element number in original).

In reply, Petitioner clarifies its position, asserting that “the Petition establishes that Figure 4 by itself discloses each and every element of claim 1.” Pet. Prelim. Reply 2 (citing Pet. 51–58; Ex. 1003 ¶¶ 116–126).

We find Patent Owner’s arguments persuasive. The first two sentences of Petitioner’s contentions in the block quote above pertain to Uhlik’s discussion of Figures 1 and 3. *See* Ex. 1005, 2:48–55 (beginning of the description of Figure 1 that includes Petitioner’s cited portion at 3:1–27); *id.* at 3:53–54 (beginning of the description of Figure 3 that includes Petitioner’s cited portion at 4:61–5:13). If—in light of Petitioner’s clarification that its theory is that Figure 4 is anticipatory—those Figures 1 and 3 portions of the block quote are omitted, we are left with citations and a conclusory assertion:

see also id., 6:19–58; Ex. 1003, ¶120. Thus, Uhlik further discloses that the host processor (i.e., “controller”) is coupled to each timeslot processor (i.e., “demodulator”) in a feedback arrangement for processing additional, subsequent bursts

received from the same subscriber station. Ex. 1003, ¶120; *see also* Ex. 1008, 16–24.

Pet. 54. The cited portion 6:19–58 pertains to Uhlik’s Figure 4. *See* Ex. 1005, 5:22–24 (beginning of the discussion of Figure 4).

Patent Owner argues that the Petition does not “contain any explanation of the relevance of this ‘*see also*’ citation, as required.” PO Prelim. Sur-reply 4 (citing *Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990, 1001–02 (Fed. Cir. 2023)). In the specific circumstances of this case, we agree with Patent Owner. We cannot discern adequately from the mere citation to a lengthy portion of Uhlik what Petitioner contends to be the recited “feedback arrangement” in the Figure 4 embodiment. Further, Petitioner’s citation to paragraph 120 of Exhibit 1003 is not helpful as that is Dr. Van der Weide repeating, without elaboration or further explanation, Petitioner’s arguments. *Compare* Pet. 54 *with* Ex. 1003 ¶ 120. And, Petitioner’s citation to several pages of Exhibit 1008, which is identified as Patent Owner’s infringement contentions in the District Court, also is unhelpful because Petitioner does not explain adequately how that exhibit supports Petitioner’s contention that Uhlik anticipates claim 1.

In reply to Patent Owner’s argument that the Petition improperly attempts to combine embodiments, Petitioner argues that “Patent Owner does not point out that Figure 1 shows a general ‘architecture’ in which the disclosed spatial processing (SDMA) techniques can be used in combination with *any* such conventional multiple access scheme (*e.g.*, FDMA, TDMA, and/or CDMA), such as the scheme illustrated in Figure 4.” Pet. Prelim. Reply 2 (citing Pet. 56–57; Ex. 1003 ¶¶ 122–123). However, Petitioner, for the purported disclosure of a feedback arrangement, relies, in part, on Uhlik’s disclosure regarding Figure 3 (passing weights to a source tracker),

and Petitioner does not explain adequately whether such specific details also apply to the purportedly anticipatory Figure 4 embodiment. *See* Pet. 54–55; *see also* PO Prelim. Sur-reply 4–5 (Patent Owner noting that Petitioner’s assertion about general architecture being applicable to any conventional multiple access scheme was made in the portion of the Petition (Pet. 56–57) addressing element 1.3, not the “feedback arrangement” of element 1.2).

Even if the subject disclosure regarding Figures 1 and 3 applies to Figure 4, we still would find Petitioner’s contentions inadequate. The first two sentences in the block quote above—the sentences that are the basis for the conclusion that Uhlik discloses the recited controller and demodulators coupled in a “feedback arrangement”—do not contain the words “controller” or “demodulators” (mapped, respectively, to the host DSP processor and the timeslot processors). Rather, Petitioner’s foundational contentions are in terms of “the base station” and a “source tracker,” the latter being a component depicted in Figure 3. Petitioner does not explain adequately how any disclosed arrangement between a base station and a source tracker applies to the recited feedback arrangement of the controller and demodulator.

We determine that Petitioner has not demonstrated a reasonable likelihood of proving that Uhlik discloses “a controller[] coupled to the first demodulator and to the at least second demodulator in a feedback arrangement,” as recited in claim 1.

Independent claims 4 and 5 also call for the controller to be coupled to demodulators in a feedback arrangement. Ex. 1001, 13:26–30 (element 4.2); 13:57–61 (element 5.2). For these elements of claims 4 and 5, Petitioner relies on its unpersuasive arguments made for element 1.2. *See* Pet. 61

(“Uhlik discloses [4.2] for the reasons discussed for [1.2].”); *id.* at 63
(“Uhlik discloses [5.2] for the reasons discussed for [1.2].”).

Accordingly, having considered the parties’ arguments and evidence, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in its challenge to independent claims 1, 4, and 5 or their respective dependent claims 2, 3, 6–10 and 13 as anticipated by Uhlik.

3. The Alleged Anticipation of Independent Claim 16 by Uhlik

Independent method claim 16, unlike independent apparatus claims 1 and 5, does not explicitly recite the feedback arrangement of the controller and demodulators. However, Petitioner’s challenge to claim 16 relies on its contentions made for those apparatus claims. *See* Pet. 73–74 (for element 16.2, relying on the reasons given for element 5.3, and, for the remaining elements of claim 16, relying on the reasons given for claim 1). Petitioner does not draw any meaningful distinction between its theories for method claim 16 and the apparatus claims, *see id.*, and we decline to try to decipher Petitioner’s contentions-by-cross-reference for claim 16 to determine whether Petitioner may have a viable case for anticipation of that claim by Uhlik’s Figure 4 embodiment (as opposed to an improper mixing of embodiments).

Additionally, for element 16.2, the flaws in Petitioner’s contentions for that element in the Barratt ’470 anticipation ground, as discussed above (*supra* Section III.D.4), apply equally to this Uhlik anticipation ground. Petitioner contends that “Uhlik discloses [16.2] for the reasons discussed for [5.3].” Pet. 74 (citing Pet. § VIII.D [5.3]; Ex. 1003 ¶ 160; Ex. 1008, 111) (bracketed element numbers in original). Element 5.3 calls for the controller to comprise a memory portion and, similar to the Barratt ’470 challenge, Petitioner’s contention that “Uhlik discloses base stations that comprise

memory portions, which may be included within the host processor 231 (‘controller’) or *other parts of the base station*,” is inadequate to show inherency of the recited memory in the controller. *See id.* at 63–64 (emphasis added). Additionally, element 16.2 calls for the “operations of demodulating [to] further comprise accessing the profiles,” an aspect not recited in element 5.3 and not addressed explicitly in Petitioner’s contentions for elements 5.3 or 16.2. *See id.* at 63–65, 74; *cf. id.* at 64–65 (Petitioner relying, in part, on Uhlik’s Figure 2 SDMAP embodiment for “maintaining profiles,” notwithstanding Petitioner’s assertion that the Figure 4 embodiment discloses all the limitations).

Accordingly, having considered the parties’ arguments and evidence, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing in its challenge to independent claim 16 or its dependent claim 17 as anticipated by Uhlik.

H. The Alleged Obviousness of Dependent Claims 11, 12, 14, and 15 Over Uhlik (Ground 5)

Petitioner alleges that dependent claims 11, 12, 14, and 15 would have been obvious over Uhlik. Pet. 74–79. These four challenged claims depend directly or indirectly from independent claim 5. Petitioner’s challenges to these claims rely on the same contentions discussed above regarding anticipation of the underling independent claim 5 by Uhlik. *See id.* Thus, for the same reasons discussed above, Petitioner has not shown a reasonable likelihood of prevailing in showing that claims 11, 12, 14, and 15 would have been obvious over Uhlik.

IV. CONCLUSION

Petitioner has not demonstrated that there is a reasonable likelihood of establishing the unpatentability of any of claims 1–17 of the '383 patent.

V. ORDER

For the foregoing reasons, it is

ORDERED that the Petition is *denied* and no trial is instituted.

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PETITIONER:

John Haynes
Wes Achey
Michael Deane
Christopher Douglas
john.haynes@alston.com
wes.achey@alston.com
michael.deane@alston.com
christopher.douglas@alston.com

PATENT OWNER:

Sarah Spires
sspires@skiermontderby.com