

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC CORPORATION and
HTC AMERICA, INC.,
Petitioner,

v.

INVT SPE LLC,
Patent Owner.

Case IPR2018-01556
Patent 7,206,587 B2

Before THU A. DANG, KEVIN F. TURNER, and BARBARA A.
BENOIT, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 314(a)

I. INTRODUCTION

A. Background

HTC Corporation and HTC America, Inc. (collectively “Petitioner”) filed a Petition for *inter partes* review of claims 1–4 of U.S. Patent No. 7,206,587 B2 (Ex. 1001, “the ’587 patent”). Paper 1 (“Pet.”). INVT SPE LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

Although Petitioner initially sought to include claims 1–3 in its challenge, Patent Owner statutorily disclaimed those claims after the Petition was filed. *See* Ex. 2001. For the reasons discussed below, in this Decision, we do not regard disclaimed claims 1–3 as claims challenged in the Petition, and instead regard claim 4 as the only challenged claim.

By statute, institution of an *inter partes* review may not be authorized “unless . . . the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Upon consideration of the Petition and the Preliminary Response, we are not persuaded Petitioner demonstrated a reasonable likelihood of prevailing in establishing unpatentability claim 4 of the ’587 patent. Accordingly, no trial is instituted.

B. Related Proceedings

According to Petitioner, the ’587 patent was originally at issue in *Inventergy, Inc. v. HTC Corporation and HTC America, Inc.*, Case No. 17-cv-200-VAC-CJB (D. Del.). Pet. 1. Petitioner contends the ’587 patent is

at issue in *INVT SPE LLC v. HTC Corporation and HTC America, Inc.*,
Case No. 2:17-cv-03740 (D.N.J.). *Id.*

C. The '587 Patent

The '587 patent issued on April 17, 2007, from an application filed December 18, 2002, and is a continuation of application No. 10/089,605, filed on April 1, 2002, now U.S. Patent No. 6,760,590. Ex. 1001, [45], [22], and [63].

The '587 patent relates to allocating “communication resources . . . to communication terminals based on downlink channel quality.” *Id.* at 2:37–43. According to the '587 patent, “among information indicative of downlink channel quality, which has a possibility of decreasing the downlink throughput when the information is received erroneously in a base station, a communication terminal provides such information with less susceptibility to errors in the propagation path to transmit.” *Id.* at 2:44–52.

In an embodiment, “[the] communication terminal . . . transmits with less susceptibility to errors in the propagation path in proportion to information for which the amount of change is large within CIR [, i.e., ‘desired carrier to interference ratio’] information.” *Id.* at 19:30–34 (brackets in original). For example, “[i]f a CIR value is indicated by a value with a decimal fraction (such as 8.7 dB),” then “information for which the amount of change is large” and “that indicates a broad value” refers to “the integer part (here, ‘8’).” *Id.* at 19:40–45. In such case, “since the amount of change per unit of the integer part is 1dB, while the amount of change per unit of the fractional part is 0.1 dB, the integer part is ‘information for which the amount of change is large[.]’” *Id.* at 19:45–54. Therefore, “if an integer part is received erroneously by a base station, the

degree of error is large compared with the case where a fractional part is received erroneously[.]” *Id.*

Figure 15, reproduced below, illustrates a configuration of the CIR signal creation section of a communication terminal. *Id.* at 3:32–34.

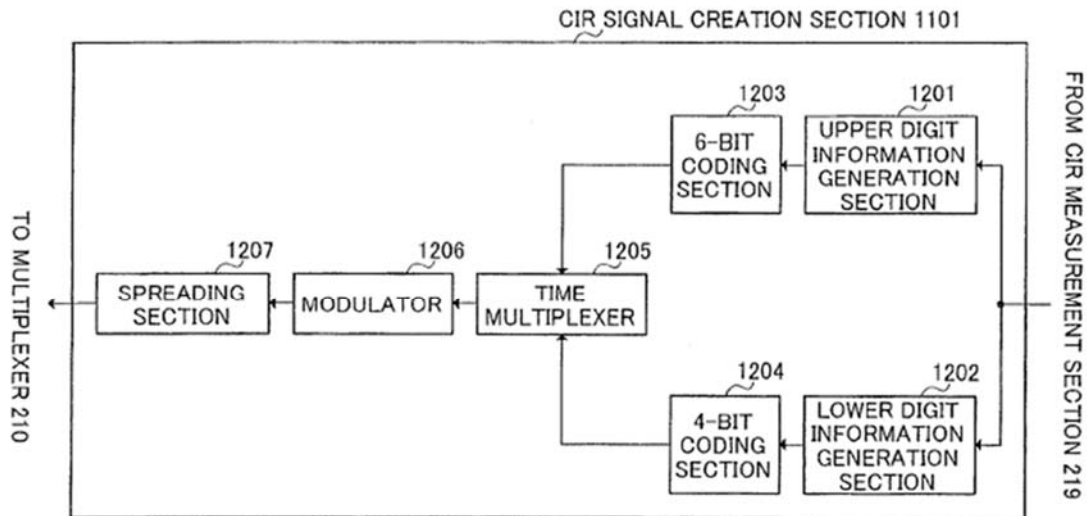


FIG.15

Figure 15 depicts a configuration of CIR signal creation section 1101, wherein, for a CIR value output from CIR measurement section is “8.7 dB,” “upper digit information generation section 1201 outputs the value of the integer part, ‘8’, to the 6-bit coding section 1203,” and “lower digit information generation section 1202 outputs the value of the fractional part, ‘7’, to the 4-bit coding section 1204.” *Id.* at 20:29–41.

D. The Challenged Claim

Independent claim 4 is the remaining challenged claim at issue, and is reproduced below:

4. A communication terminal apparatus comprising:
- a measuring device that measures reception quality of a pilot signal to output information having a plurality of bits that indicate the measured reception quality;
 - a coding device that encodes the information to obtain a code word; and
 - a transmitter that transmits the code word, wherein:
 - the coding device encodes the information such that the most significant bit of the plurality of bits is less susceptible to errors in a propagation path than other bits of the plurality of bits.

Ex. 1001, 26:20–30.

E. Asserted Grounds of Unpatentability

Petitioner contends that claims 1–4 are unpatentable based on the following specific ground (Pet. 3):

Reference(s)	Basis	Claim(s) Challenged
Padovani ¹ and Gils ²	§ 103 ³	1–4

As discussed above, and for the reasons discussed below, we regard claim 4 as the only challenged claim. See Section I.A.

Petitioner also relies on the declaration of Paul S. Min, Ph.D. (Ex. 1017) for support. Pet. 3.

¹ PCT Publication No. WO 99/23844, published May 14, 1999 (Ex. 1009, “Padovani”).

² W. van Gils, “Design of error-control coding schemes for three problems of noisy information transmission, storage and processing,” dissertation, Eindhoven Univ. of Technology, Eindhoven, the Netherlands, 1988 (Ex. 1010, “Gils”); see Pet. vii (Exhibit List).

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. Because the challenged patent was filed before March 16, 2013, we refer to the pre-AIA version of § 103.

II. ANALYSIS

A. *Claim Construction*

The Board accorded the Petition a filing date of August 22, 2018 (Paper 4, 1), prior to the effective date of the rule change that replaces the broadest reasonable interpretation (“BRI”) standard. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51340 (Oct. 11, 2018) (“This rule is effective on November 13, 2018 and applies to all IPR, PGR and CBM petitions filed on or after the effective date.”). Under that standard, and absent any special definitions, we generally give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes claim construction for “code word minimum distance” and “proportional to the degree of measured downlink channel quality” recited in claim 1. Pet. 15–19. Patent Owner points out that “[t]he Petition does not assert any term in claim 4 [, which is the only claim at issue,] requires construction,” and asserts that Patent Owner “does not believe that any claim terms require express construction to deny the Petition.” Prelim. Resp. 13.

To the extent it is necessary to determine whether to institute an *inter partes* review, we discuss claims terms in the context of analyzing the asserted ground. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed

that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

B. Principles of Law

In an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied on). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007) (stating that a legal conclusion of “obviousness” cannot be “mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support” (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006))). *See also In re Warner*, 379 F.2d 1011, 1017

(CCPA 1967) (stating that obviousness under 35 U.S.C. § 103 “clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art”).

C. Level of 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) (citation omitted). In that regard, Petitioner’s Declarant, Dr. Min, testifies that a person of ordinary skill in the art “would have had a bachelor’s degree in electrical engineering, computer engineering, mathematics, or a related field, and one to two years of experience in wireless/mobile communications or equivalent education and experience.” Pet. 7–8; Ex. 1017 ¶ 55.

At this juncture, Patent Owner does not dispute Dr. Min’s assessment on the level of ordinary skill in the art. *See generally* Prelim. Resp. Based on the current record, we apply Dr. Min’s assessment for purposes of this Decision. We also note that the prior art of record currently in the instant proceeding is consistent with this level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (holding that absent evidence to the contrary, “the prior art itself [may] reflect[] an appropriate level” of ordinary skill in the art).

D. Asserted Obviousness over Padovani, in view of Gils

Petitioner alleges that claims 1–4 would have been obvious over Padovani and Gils, as viewed by a person of ordinary skill in the art. Pet.

19–73. Patent Owner raise several arguments in response. Prelim. Resp. 1–44. Below are brief overviews of Padovani and Gils, followed by an analysis of the parties’ contentions regarding the challenged claims.

1. *Padovani*

Padovani, titled “METHOD AND APPARATUS FOR HIGH RATE PACKET DATA TRANSMISSION,” published as an International Application under the Patent Cooperation Treaty (PCT) on May 14, 1999, with a filing date of November 3, 1998. Ex. 1009, at [54], [43], [22]. Padovani relates to “high rate packet data transmission” in “a data communication system capable of variable rate transmission.” *Id.* at Abstract.

In Padovani, “[a] mobile station establishes communication with a base station,” and in this connected state, “the mobile station can receive data and control messages from the base station, and is able to transmit data and control messages to the base station.” *Id.* at 9:5–10. The mobile station then “monitors the forward link for transmission from the base stations in the active set of the mobile station,” and specifically, “the mobile station measures the signal-to-noise-and-interference ratio (C/I) of the forward link pilot from the base stations in the active set, as received at the mobile station.” *Id.* at 9:9–14. In particular, “[u]pon decoding the paging messages, and for each time slot until the data transmission is completed, the mobile station measures the C/I of the forward link signals from the base stations in the active set . . . by measuring the respective pilot signals[,]” and “then selects the best base station based on a set of parameters” which comprises “the present and previous C/I measurements and the bit-error-rate or packet-error-rate.” *Id.* at 9:34–10:2.

“The mobile station then identifies the best base station and transmits to the selected base station a data request message [“DRC message”] on the data request channel[,],” wherein the DRC message “can contain the requested data rate or, alternatively, an indication of the quality of the forward link channel (e.g., the C/I measurement itself, the bit-error-rate, or the packet-error-rate).” *Id.* at 10:2–9. The mobile station encodes the DRC message with an error correcting code in “a predetermined coding format” and then transmits the encoded message to the base station. *Id.* at 27:35–36; 45:15–33, Fig. 6. “Coding of the DRC message is important since the error probability of the DRC message needs to be sufficiently low because incorrect forward link data rate determination impacts the system throughput performance.” *Id.* at 45:17–22.

In an exemplary embodiment, a “CRC block encoder . . . encodes the 3-bit DRC message into an 8-bit code word.” *Id.* at 45:20–22. “[T]he DRC message is transmitted to the selected base station\,” which is “achieved by covering the DRC message with the Walsh code which identifies the selected base station.” *Id.* at 45:32–46:5.

2. *Gils*

Gils purports to be a Ph.D. thesis entitled “Design of Error-Control Coding Schemes for Three Problems of Noisy Information Transmission, Storage and Processing,” which Petitioner contends was submitted to Eindhoven University of Technology in The Netherlands in 1988. Ex. 1010, 1⁴; see Prelim. Resp. 15. In data transmission and storage, “a desired

⁴ For clarity, we refer to the exhibit page numbers in the bottom right corner of each page, not the dissertation page numbers in the upper corner of each page.

level of error control can be guaranteed by using error-correcting codes.” Ex. 1010, 13. In contrast to error-correcting codes that “can successfully be applied . . . where all positions in a message word require equal protection against errors,” Gils describes the design of error-control coding for “applications . . . in which some message positions are more important than others.” *Id.* at 18. “For example in transmitting numerical data, errors in the sign or high-order digits are more serious than are errors in the low-order digits.” *Id.*

According to Gils, “[l]inear codes that protect some positions in a message word against a larger number of errors than other ones are called *Linear Unequal Error Protection (LUEP) codes*.” *Id.* Gils identifies a basic problem with LUEP codes as having “to find an LUEP code with a given dimension and separation vector such that its length is minimal and hence its information rate is maximal.” *Id.* at 18–19.

3. *Analysis*

a. Claims 1–3

Petitioner alleges that claims 1–3 would have been obvious over Padovani and Gils. Pet. 44–73. As noted above, Patent Owner “disclaimed claims 1–3 of the ’587 patent[.]” Prelim. Resp. 1 (citing Ex. 2001). Thus, according to Patent Owner, “claim 4 (the ‘Challenged Claim’) is the only remaining claim challenged by the Petition.” *Id.* at 2; *see also* 35 U.S.C. § 253 (indicating a patentee may disclaim claims).

We agree with Patent Owner. “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.” *Guinn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996) (citing

Altoona Publix Theatres, Inc. v. Am. Tri-Ergon Corp., 294 U.S. 477 (1935)). An *inter partes* review cannot be instituted on claims that have been disclaimed and no longer exist. See 37 C.F.R. § 42.107(e) (“No *inter partes* review will be instituted based on disclaimed claims.”). This conclusion is consistent with other panel decisions addressing this issue. See, e.g., *Intuitive Surgical, Inc. v. Ethicon LLC*, Case IPR2018-00935, Paper 9, 9–10 (PTAB Dec. 7, 2018); *Vestas-Am. Wind Tech. Inc. v. Gen. Elec. Co.*, Case IPR2018-01015, Paper 9, 12–14 (PTAB Nov. 14, 2018).

Accordingly, we treat claims 1–3 as having never been part of the ’587 patent, and do not institute *inter partes* review on these claims. As discussed above, we regard claim 4 as the only challenged claim. See Sections I.A and I.E.

b Claim 4 over Padovani, in view of Gils

Petitioner argues that claim 4 would have been obvious over Padovani and Gils. Pet. 36–44. We have reviewed the parties’ assertions and supporting evidence. For the reasons discussed below, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claim 4 would have been obvious over Padovani and Gils.

Petitioner contends “Gils recognizes that greater protection may be needed for certain bits, e.g., one or more higher order or more significant bits (Pet. 32 (citing Ex. 1010, 6)), and that “Padovani contemplates encoding a DRC message that can include actual C/I measurements which may be represented in terms of a decimal integer and decimal fraction (like the ’587 Patent)” (Pet. 32–33 (citing Ex. 1009, 23:29–24:2)). Citing Petitioner’s Declarant, Dr. Min, Petitioner contends, “a POSITA would have been motivated to provide greater protection for the decimal integer

portion (an error in which would be magnified versus an error in the decimal fraction portion).” Pet. 33 (citing Ex. 1017 ¶ 131).

According to Petitioner, “Padovani contemplates the transmission of DRC messages along a forward link, where the DRC messages can be represented in binary form, i.e., as a k-bit data or message word.” Pet. 40 (citing Ex. 1009, 45:15–22). Petitioner contends, “[t]he nature of binary numbers (or other base-x number systems) means that the leftmost bit of any binary number is the most significant bit.” Pet. 40 (citing Ex. 1017 ¶ 154). According to Petitioner, “to provide greater protection for a particular portion (one or more of the bits comprising the 3-bit rate index) of a C/I measurement representative of a forward link channel quality,” such as that of Padovani, “a POSITA would have been motivated to provide greater protection for certain bits by selecting appropriate code words generated by one or more of the coding schemes contemplated by Gils,” and thus, use “different coding schemes for the different parts.” Pet. 33 (citing Ex. 1017 ¶ 132).

We recognize that Gils states that “it is natural to give parts of mutually different importance different protection against errors.” See Ex. 1010, 6. We also recognize that Padovani teaches transmitting a data request message (“DRC message”) that can contain “an indication of the quality of the forward link channel” (Ex. 1009, 12:3–8), and then “encod[ing] the message in accordance with a predetermined coding format” (*id.* at 47:15–31 (emphasis added)). However, neither Gils nor Padovani, nor the combination thereof, teaches or suggests encoding “information having a plurality of bits” such that “*the most significant bit of the plurality of bits*” is “*less susceptible to errors in a propagation path than*

other bits of the plurality of bits,” wherein “[the] plurality of bits . . . indicate the measured reception quality,” as required by claim 4. See claim 4 (emphasis added).

Although Petitioner contends “a POSITA would have been motivated to provide greater protection for the decimal integer portion (an error in which would be magnified versus an error in the decimal fraction portion)” in *Padovani* (Pet. 33), Petitioner does not identify any passage or combination of passages in *Padovani* that teaches or suggests providing, or even the need to provide, greater protection for one decimal portion than the other decimal portion, let alone by using “different coding schemes for the different parts.” *Id.* As Patent Owner asserts, “*Padovani* discloses using a *single* code to encode the DRC message[,]” and “does not teach using multiple codes to encode different portions of the DRC message.” Prelim. Resp. 14 (citing Ex. 1009, 45:20–22 (emphasis added)).

We recognize that Petitioner’s Declarant, Dr. Min, testifies that, “by virtue of *Padovani* contemplating the use of an (n,k) coding scheme,” the POSITA “would have naturally sought out similar coding schemes [as those of Gils] to protect DRC messages.” See Pet. 41 (citing Ex. 1017 ¶ 156). Dr. Min further testifies that “a POSITA would have been motivated to provide greater protection for certain bits by selecting appropriate code words generated by one or more of the coding schemes contemplated by Gils,” and thus, use “different coding schemes for the different parts.” Ex. 1017 ¶ 132. Dr. Min’s testimony, however, does not address adequately why one of ordinary skill in the art would have used together different coding schemes from Gils, let alone a separate scheme for certain bits over the other bits.

As Dr. Min testifies, “a single UEP coding scheme could also be used depending upon how a POSITA would have wanted to implement unequal error protection.” Ex. 1017 ¶ 132; see Pet. 33 (citing Ex. 1017 ¶ 132). As such, Dr. Min acknowledges that a single unequal error protection coding scheme *could* be used as well as applying different coding schemes to different parts of a message. Here, Dr. Min’s testimony that a single unequal error protection coding scheme could be used further undermines Petitioner’s position that one of ordinary skill in the art would have used the different coding schemes for different parts as set forth in Gils.

Thus, Dr. Min’s testimony does not adequately explain why one of ordinary skill in the art would have applied different coding schemes from Gils to the DRC message of Padovani, much less in the manner proposed by Petitioner, of providing greater protection for the decimal integer portion than the decimal fraction portion, especially when Padovani discloses “using a single code to encode the DRC message.” See Prelim. Resp. 14 (citing Ex. 1009, 45:20–22).

Moreover, Dr. Min’s contention that “[t]he nature of binary numbers (or other base-x number systems) means that the leftmost bit of any binary number is the most significant bit” (Ex. 1017 ¶ 154) is conclusory. As Patent Owner points out, “Dr Min’s declaration, however, merely repeats the allegations of the Petition without any explanation or citation to any supporting or corroborating evidence.” Prelim. Resp. 20 (citing Ex. 1017 ¶ 154). That is, “[t]here is no proffered evidence that it was well understood by a POSITA at the time that the leftmost bit in binary numbers, and specifically in the DRC message of *Padovani*, is the ‘most significant bit.’” Prelim. Resp. 20.

For that reason, we give little weight to Dr. Min's uncorroborated testimony that "the leftmost bit of any binary number is the most significant bit." 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."); *In re Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) ("[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations[.]").

In view of Petitioner's lack of proffered evidence that it was well understood by a POSITA that the leftmost bit in the DRC message of Padovani is the "most significant bit" of claim 4, or that the POSITA would have used "different coding schemes for the different parts" in Padovani (Ex. 1017 ¶¶ 132, 154), Dr. Min's testimony does not provide sufficient support for Petitioner's contentions that it would have been obvious to provide greater protection for the decimal integer portion than the decimal fraction portion, in view of Padovani and Gils. That is, although we agree with Petitioner that Gils states that "it is natural to give parts of mutually different importance different protection against errors" (Ex. 1010, 6), and that Padovani teaches transmitting a DRC message that can contain "an indication of the quality of the forward link channel" (Ex. 1009, 12:3–8), those facts alone are insufficient to support a conclusion of obviousness, as set forth in *KSR*, of claim 4.

Here, for these reasons discussed above, we conclude that Petitioner has not provided sufficient evidence from prior art references or Dr. Min's declaration testimony to support its contention that one of ordinary skill in the art would have used Gils's techniques to encode Padovani's DRC

message in the manner required by the claims—such that the most significant bit of the plurality of bits is encoded to be less susceptible to errors. Petitioner also has not demonstrated articulated reasoning with rational underpinning to support the legal conclusion of obviousness. See *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1193 (Fed. Cir. 2014). Instead, we conclude that Petitioner used improper hindsight to reconstruct the claimed subject matter by using the claims as a guide to combine the prior art references. *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (“Care must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’” (citation omitted)).

For the foregoing reasons, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claim 4 would have been obvious over Padovani and Gils. See 35 U.S.C. § 316(e) (To prevail in an *inter partes* review that has been instituted, “the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”).

III. CONCLUSION

We conclude that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '587 patent challenged in the Petition.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied as to all challenged claims of the '587 patent, and no trial is instituted.

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