

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE INC.  
Petitioner,

v.

NETWORK-1 TECHNOLOGIES, INC.,  
Patent Owner.

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CBM2015-00113  
Patent 8,904,464 B1

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Before KEVIN F. TURNER, LYNNE E. PETTIGREW, and  
JON B. TORNQUIST, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*Covered Business Method Patent Review*  
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

## I. INTRODUCTION

### A. Background

Google Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting a review under the transitional program for covered business method patents of claims 1–34 of U.S. Patent No. 8,904,464 B1 (Ex. 1001, “the ’464 Patent”). Network-1 Technologies, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 5, “Prelim. Resp.”). Pursuant to 35 U.S.C. § 324, we instituted this trial on the following grounds:

Ground	Prior Art	Challenged Claims
§ 103	Ferris <sup>1</sup> , Lambert <sup>2</sup> , and Gionis <sup>3</sup>	1–11, 13–15, 18–28, and 30–32
§ 103	Ferris, Lambert, Gionis, and Philyaw <sup>4</sup>	16 and 33
§ 103	Ferris, Lambert, Gionis, and Goldstein <sup>5</sup>	12, 17, 29, and 34

Paper 7 (“Dec.”).

Subsequently, Patent Owner filed a Patent Owner’s Response, (Paper 19, “PO Resp.”), and Petitioner filed a Reply to that Response (Paper 23, “Reply”). Thereafter, pursuant to our Order (Paper 25), Patent Owner filed a paper pointing out arguments in Petitioner’s Reply that were alleged to be beyond the proper scope of reply (Paper 29), and Petitioner filed a paper responding to Patent Owner’s citations (Paper 30).

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<sup>1</sup> International Patent Publication WO 99/04568 (Ex. 1006, “Ferris”).

<sup>2</sup> U.S. Patent No. 4,381,522 (Ex. 1007, “Lambert”).

<sup>3</sup> Aristides Gionis et al., *Similarity Search in High Dimensions via Hashing*, Proceedings of the 25th International Conference on Very Large Data Bases, 518–29 (Ex. 1008, “Gionis”).

<sup>4</sup> International Patent Publication WO 00/16205 (Ex. 1009, “Philyaw”).

<sup>5</sup> U.S. Patent No. 5,410,326 (Ex. 1010, “Goldstein”).

An oral hearing was held on May 10, 2016. A transcript of the hearing is included in the record. Paper 34 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73.

### *B. Related Matters*

The parties inform us that the ’464 Patent is the subject of the following lawsuit: *Network-1 Technologies, Inc. v. Google Inc. and YouTube, LLC*, Case No. 1:14-cv-09558 (S.D.N.Y.). Pet. 76–77; Paper 4, 2–3. YouTube, LLC is a subsidiary of Petitioner, and is acknowledged as a real party-in-interest. *Id.* In addition, four additional patents, U.S. Patent Nos. 8,640,179, 8,205,237, 8,010,988, and 8,656,441, all issuing from applications related to the ’464 Patent, were subject to trials for *inter partes* review, namely IPR2015-00343, IPR2015-00345, IPR2015-00347, and IPR2015-00348, respectively.

### *C. The ’464 Patent*

The ’464 Patent relates to identifying a work, such as a digital audio or video file, without the need to modify the work. Ex. 1001, 1:41–46, 4:42–51. This identification can be accomplished through the extraction of features from or about the work, and comparison of those extracted features with records of a database or library. *Id.* at Abs. Thereafter, an action may be determined based on the identification determined. *Id.* at 5:21–23. Patent Owner refers to Figure 1 as illustrating the steps of the claimed computer-implemented methods (Prelim. Resp. 3–4):

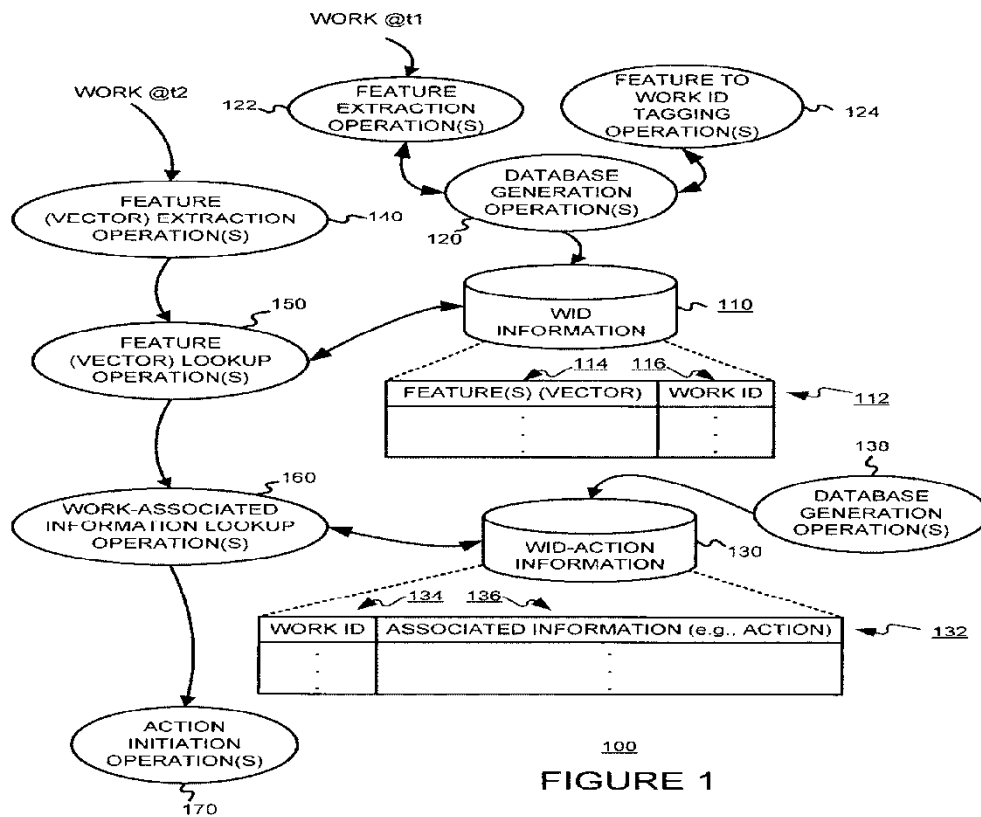


Fig. 1 of the '464 Patent illustrating the claimed method

*D. Illustrative Claim*

Claims 1 and 18 are independent, claim 1 is considered representative of the claims challenged, and claim 1 is reproduced below:

1. A method comprising:

receiving, by a computer system including at least one computer, a first electronic media work;

correlating, by the computer system using a non-exhaustive, near neighbor search, the first electronic media work with an electronic media work identifier;

storing, by the computer system, correlation information associating the first electronic media work and the electronic media work identifier;

accessing, by the computer system, associated information related to an action to be performed in association with one or more electronic media works corresponding to the electronic media work identifier;

generating, by the computer system, a tag associated with the first electronic media work;

providing, from the computer system to a user electronic device, the first electronic media work and the associated tag;

obtaining, by the computer system from the user electronic device, a request related to the associated tag;

generating, using the computer system, *machine-readable instructions based upon the associated information to be used in performing*, at the user electronic device, the action; and

providing, from the computer system to the user electronic device, *the machine-readable instructions to perform the action in response to the request*.

Ex. 1001, 24:44–25:3 (emphases added).

## II. ANALYSIS

### A. Claim Construction

The Board interprets claims of unexpired patents using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, and absent any special definitions, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

In our Institution Decision, we construed the claim term “near neighbor search” as “identifying a close, but not necessarily exact or closest, match,” and determined that no other claim term needed explicit construction. Dec. 9–10. Although apparently not taking issue with our construction, Patent Owner argues that Petitioner would need to adopt certain claim constructions in order for the asserted grounds to teach or suggest all of the elements of the claims. PO Resp. 2.

Although we are not persuaded by Patent Owner’s arguments with respect to the necessitated constructions that remain unstated by Petitioner, we are persuaded that a specific construction of a single claim term simplifies our consideration of the grounds proffered in the Petition. That specific construction is for the claim term “machine-readable instructions,” recited in independent claims 1 and 18.

Both claims 1 and 18 recite, in part, that the computer system generates “machine-readable instructions” and provides the “machine-readable instructions” to the first user electronic device “to perform the action in response to the request.” Ex. 1001, 24:64–25:3, 26:7–13. Patent Owner argues that “machine-readable instructions” are “code or pseudocode that is executed using a computer processor, not a message to be read and followed by a human.” PO Resp. 32–34. Patent Owner argues that “machine-readable instructions” is a term of art, and that both Patent Owner’s declarant and Petitioner’s declarant agree. *Id.* at 33 (citing Ex. 2006 ¶¶ 106–107; Ex. 2007, 75:5–7). Patent Owner cites multiple sources regarding the understanding of the term “machine-readable instructions,” and argues that “instructions” would be understood in the context of the ’464 Patent as code or pseudocode executed by a computer

processor. *Id.* at 34–40.

Petitioner responds that Patent Owner’s proposed construction lacks support in the intrinsic record, and that “no such evidence exists” precluding “machine-readable instructions” from covering messages to be read by a human. Reply 15–16. Petitioner also cites to Patent Owner’s declarant’s testimony, stating that changes in messages, to be read by humans, are a result of changes made to what the computer does, i.e., instructions. *Id.* at 16–17. Based on the arguments made, we agree in part with Patent Owner.

Dependent claims 16, 17, 33, and 34 all limit the claim term “machine-readable instructions,” with claims 16 and 33 reciting that the instructions “comprise a hyperlink to a URL,” and claims 17 and 35 reciting that the instructions “comprise instructions to dial a telephone number.” It seems clear that the preface “machine-readable” connotes that the instructions must be readable by a machine or computer, but it is not clear that they could not be discernable by a human. Instructions, or code, that is compiled and ready to be run by a machine would not necessarily be discernable by a human, but the claim term is broader than that. A hyperlink includes an instruction, of a sort, to locate a resource, and an instruction to dial a telephone number would need to include that telephone number, which would be discernable. As such, we find the clause “not a message to be read and followed by a human,” to narrow the broadest reasonable claim construction unnecessarily.

It is also clear that the “machine-readable instructions” cannot merely be text or non-functional communication, because independent claims 1 and 18 specifically recite that instructions are used “to perform the action.” Text sent to the user device meant merely for display would not meet the

conditions of the claims because the receiving machine would not need to read or construe the text in order to effect display. Similarly, if an image was sent to the user device, it could be displayed, but one of ordinary skill in the art would not interpret that image as “machine-readable instructions.” Although the transmitted text could be used in the performance of the action, we are persuaded that mere text would be outside the bounds of what would be considered “machine-readable instructions” in the context of the disclosure of the ’464 Patent. We are persuaded that the “machine-readable instructions” must be discernable by a processor and dictate steps to be carried out by that processor. Based on the evidence and arguments provided by Patent Owner and Petitioner, we are persuaded that “machine-readable instructions,” as a term of art, would have been understood as code or pseudocode that is executable by a computer processor.

For the purposes of our review of the claims of the ’464 Patent and the asserted grounds, no explicit construction of any other claim term is needed.

### *B. Covered Business Method Patent Review*

Section 18 of the AIA<sup>6</sup> provides for the creation of a transitional program for reviewing covered business method patents. Section 18 limits review to persons or their privies that have been sued or charged with infringement of a “covered business method patent,” which does not include patents for “technological inventions.” AIA §§ 18(a)(1)(B), 18(d)(1). 37 C.F.R. § 42.302 states “[c]harged with infringement means a real and substantial controversy regarding infringement of a covered business method

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<sup>6</sup> Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (Sept. 16, 2011) (“AIA”).



patent exists such that the petitioner would have standing to bring a declaratory judgment action in Federal court.” Petitioner states that it was charged with infringement of the ’464 Patent in *Network-1 Technologies, Inc. v. Google Inc.*, Case No. 1:14-cv-09558 (S.D.N.Y. Dec. 3, 2014). Pet. 77. Patent Owner does not dispute this statement.

A covered business method patent “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1). In our Institution Decision, we determined that the ’464 Patent includes at least one claim that recites a method directed to a financial product or service and is not a patent for a technological invention, and therefore is eligible for covered business method patent review. Dec. 6–9. Patent Owner does not contest this determination in its Patent Owner Response, nor did Patent Owner argue in its Preliminary Response that the ’464 Patent is not a covered business method patent. Based on the present record, we see no reason to alter our determination that the ’464 Patent is eligible for covered business method patent review.

*C. Obviousness over Ferris, Lambert, and Gionis  
Claims 1–11, 13–15, 18–28, and 30–32*

Petitioner argues that Ferris, in combination with Lambert and Gionis, renders obvious claims 1–11, 13–15, 18–28, and 30–32. Pet. 27–58.

Petitioner argues that Ferris teaches a majority of the elements of the claims, arguing that it would have been obvious to add a computer to the system of Ferris, per Lambert, and obvious to employ a non-exhaustive, near neighbor search, instead of Ferris’s “sliding window,” in view of Gionis. Pet. 31–35.

In the Institution Decision, we determined that upon review of Petitioner's evidence and analysis, and taking into account Patent Owner's arguments in the Preliminary Response, the challenged claims are more likely than not rendered obvious by the combination of Ferris, Lambert, and Gionis. Dec. 22.

Ferris is directed to a communication system that allows for display of advertisements, product and service offers, and other information on a remote control device. Ex. 1006, Abs.

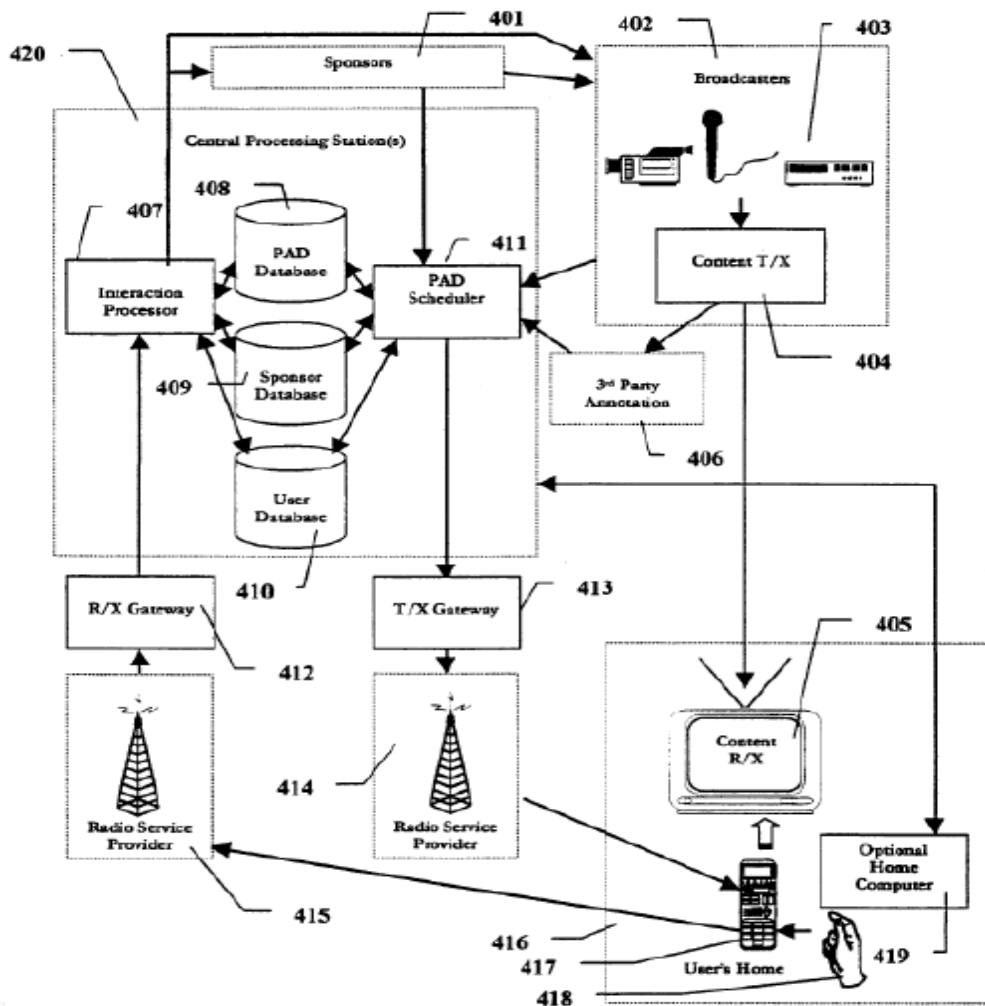


Figure 3 of Ferris above illustrates its system

Broadcasters 402 generate and send video content to central processing station 420 and user home 416. *Id.* at 10–11. Central processing station 420 receives the broadcast signal as it is sent and compares it to stored samples to determine whether any portions of the broadcast match any stored samples. *Id.* The comparison may be performed using sliding-window, square-of-difference techniques. *Id.* at 11–12. The home user’s receiving device 417, or remote control device, has a display that provides the aforementioned information. *Id.* at Abs. When there is a match, the central processing station sends a Programme Associated Data Unique Identifier (“PADUID”) to the device, where the user may obtain additional information, track a product, or make a purchase, related to the viewed television program, by actuating a button on the device. *Id.* at 13, 23–24, Figs. 2A, 4.

Petitioner acknowledges that Ferris does not explicitly disclose a hardware implementation of broadcaster 402, but argues that it would have been obvious to add a computer to the system of Ferris, per Lambert. Pet. 31–32. Petitioner asserts that the use of a computer in the broadcaster unit would have been well known and would have allowed for bidirectional communication. *Id.* Petitioner cites Lambert for its disclosure of a broadcaster, i.e., cable television system, having a minicomputer that provides switching control signals to selectively couple video programs for sending to television transmitters. Ex. 1007, 2:34–49, Fig. 1. Petitioner continues that it would have been a mere matter of design choice to implement the broadcaster of Ferris with a computer, per Lambert, and that the combination would have been a simple substitution of known elements to obtain predictable results. Pet. 32.

Petitioner also argues that it would have been obvious to employ a non-exhaustive, near neighbor search, instead of Ferris’s “sliding window,” in view of Gionis. *Id.* at 32–35. Petitioner points out that Ferris teaches the use of a matching engine in its comparison process that employs a “commonly known algorithm (such as a sliding-window, averaged, square-of-difference system with an activation threshold)” to match samples with broadcasted programs. Pet. 32–33 (citing Ex. 1006, 12). Petitioner also points out that Gionis discloses a method for approximate similarity searching in high-dimensional data such as image and video databases, pattern recognition, and other data having a large number of relevant features, where the resulting algorithm is non-exhaustive. Pet. 33 (citing Ex. 1008, 518–519). Petitioner argues that it would have been a matter of design choice and the substitution of known elements to implement Gionis’s non-exhaustive, near neighbor search in the comparison process used by Ferris. Pet. 34.

Patent Owner argues that the combination of references fails to teach or suggest all of the elements of the claims, and that the motivation to combine the references is insufficient. PO Resp. 3–72. More specifically, with respect to the instant decision, Patent Owner argues that the claim element “machine-readable instructions,” recited in independent claims 1 and 18, is not taught or suggested by Ferris, Lambert, and Gionis. *Id.* at 30–49. Patent Owner argues that the Petition relies on Ferris alone to disclose the relevant elements of claims 1 and 18, specifically relying on the “message that includes information about the requested product” in Ferris. *Id.* at 31–32 (citing Pet. 35, 40, 42; Ex. 1003 ¶ 72).

Patent Owner continues that “the message identified by Petitioner—

the alphanumeric text displayed on the remote control device 417 (*see* Figures 2A, 2C, and 2L) —is data displayed to the user,” and is different from the claimed “machine-readable instructions.” *Id.* at 40–41. Patent Owner argues that the remote control device in Ferris itself uses a program or application resident thereon to display received text, but it does not receive “machine-readable instructions.” *Id.* at 41. Patent Owner also argues that Petitioner has not identified any alternative instructions in Ferris, so that it relies solely on the “message that includes information about the requested product.” *Id.* at 42 (citing Pet. 42–43; Ex. 2007, 80:15–82:14). Patent Owner also cites to its declarant’s testimony that transmitted data, generally, need not be “machine-readable instructions”:

[W]hile data that can be “received by and displayed on” the remote control apparatus 417 may be “machine readable,” such data does not constitute “instructions” for the machine (*i.e.*, code or pseudocode executed by a computer processor) and therefore is not “*machine-readable instructions*.” “*Machine readable instructions*” is not simply data that can be “received by and displayed on a receiving apparatus,” *i.e.*, machine readable; they must also be instructions for the machine to do something—*i.e.*, “*machine readable instructions*.”

Ex. 2006 ¶¶ 126–127. As discussed below, we agree with Patent Owner.

In response, Petitioner argues that “[t]he message sent by Central Processing Station 402 comprises ‘machine-readable instructions’ because the information is received by and displayed on receiving apparatus 417.” Reply 15–16 (citing Pet. 42). However, in our view, simply because the message is received and displayed does not mean that the message comprises “machine-readable instructions.” As Patent Owner points out, both SMS messages and emails can be received and displayed, but need not contain instructions. PO Resp. 41 (citing Ex. 2006 ¶¶ 120–121 (noting that

code or pseudocode resident on the receiving phone or computer may process the received data)). This comports with the disclosure of Ferris that the remote control device 417 “will contain a two-way paging chipset to allow reception and transmission of digital information.” Ex. 1006, 13. Thus, the fact that the receiving apparatus in Ferris can receive and display the message does not make that message “machine-readable instructions.”

Petitioner continues that the receiving apparatus 417 only displays the information about the requested product because the message instructs it to do so. Reply 16. However, we can find nothing in the Petition or in Ferris that describes that it is the message *itself* that provides the instruction to the apparatus. It is equally likely that the receiving apparatus displays whatever it is sent, like a computer monitor, without the message actualizing its own display. Although it is clear that the receiving apparatus has a processor and runs code, i.e., displays data on cue and accepts user interaction (Ex. 1006, 13), we can find nothing in Ferris that discloses code or pseudocode received by the receiving apparatus in the message signals. *See also* PO Resp. 42 (citing Ex. 2007, 80:15–81:5 (asserting that Petitioner does not contend that Ferris expressly discloses this limitation)). As such, we do not find Petitioner’s argument to be persuasive.

Petitioner also argues that there is no intrinsic evidence that machine-readable instructions cannot be read by a human. Reply 16. We agree, and we do not include such a requirement in our claim construction of “machine-readable instructions.” *See* Section II.A. Petitioner also points out that Patent Owner’s declarant, Dr. Karypis, recognized that changes in messages to be output by a computer and read by a human change what the computer does. Reply 16–17 (citing Ex. 1028, 50:4–52:1). We do not disagree, but

we do not find it material to the disclosure of Ferris, as Ferris does not detail any type of code or pseudocode being sent to the remote control device, as discussed above. As an example, changing the wording of a text message would certainly change what would be displayed upon receipt, but we are not persuaded that any code or pseudocode would be altered by the change in the text of the text message. *See* Ex. 2006 ¶ 121 n.10. As such, we do not find Petitioner’s arguments to be persuasive.

Petitioner also argues that we have previously recognized the obviousness of dependent claims 16, 17, 33, and 34 over combinations of Ferris, Lambert, Gionis, Philyaw, and Goldstein, and therefore the broader recitation of “machine-readable instructions” in independent claims 1 and 18 must have been obvious in view of the obviousness of the more narrowly claimed instructions. Reply 14. We do not agree. The preliminary obviousness determination of the dependent claims was prefaced on the asserted teachings of Ferris. Dec. 22 (“[W]e are persuaded that Ferris, Lambert, and Gionis more likely than not render independent claims 1 and 18 obvious.”). Based on the record developed at trial, however, we conclude that claims 1 and 18 would not have been obvious in view of Ferris because Ferris does not disclose or suggest “machine-readable instructions,” as we interpret that claim limitation. Additionally, we find nothing in the Petition that “cures” the deficiencies of Ferris; rather, the application of Philyaw and Goldstein is made contingent on altering the machine-readable instructions that Petitioner alleges are taught in Ferris. Pet. 58–63.

Similarly, Petitioner urges us that with respect to its challenge to independent claims 1 and 18, “[m]erely adding *Philyaw* or *Goldstein* to the combination of *Ferris*, *Lambert*, and *Gionis*, would be both sufficient and

proper.” Reply 15 (emphasis in original, citations omitted). We do not agree. First, we must be cognizant not to “‘change theories in midstream without giving respondents reasonable notice of the change’ and ‘the opportunity to present argument under the new theory.’” *SAS Institute, Inc. v. ComplementSoft, LLC*, 825 F.3d 1341, 1351 (Fed. Cir. 2016) (quoting *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir. 2015)).

Second, Petitioner had the opportunity to include Philyaw or Goldstein in its ground addressing independent claims 1 and 18, and chose not to include those references. Additionally, we do not have before us a rationale to combine Ferris, Lambert, and Gionis with either Philyaw or Goldstein, in view of Ferris’s lack of disclosure of its message being “machine-readable instructions.” Even assuming that some type of rationale *could* be formed, no such rationale has been presented, and any rationale produced herein would prejudice Patent Owner by not providing Patent Owner the opportunity to respond. As such, we decline Petitioner’s offer to institute a new, separate ground at this stage of the trial.

Therefore, we are not persuaded that Petitioner has established by a preponderance of the evidence that claims 1–11, 13–15, 18–28, and 30–32 of the ’464 Patent are unpatentable under 35 U.S.C. § 103 as being obvious over Ferris, Lambert and Gionis.

*D. Obviousness over Ferris, Lambert, Gionis, and Philyaw  
Obviousness over Ferris, Lambert, Gionis, and Goldstein  
Claims 12, 16, 17, 29, 33, and 34*

As discussed above, we are not persuaded that Petitioner has established by a preponderance of the evidence that the independent claims are rendered obvious over the combination of Ferris, Lambert, and Gionis.



Claims 12, 16, and 17 depend from independent claim 1, and claims 29, 33, and 34 depend from independent claim 18. We are not persuaded of the obviousness of the subject dependent claims on the basis of the grounds proffered in the Petition.

Claims 16 and 33 recite that “the machine-readable instructions comprise a hyperlink to a URL.” With respect to those claims, Petitioner argues that it would have been obvious to one of ordinary skill in the art to modify the instructions of Ferris to comprise a hyperlink, because such instructions were well known and would have enabled a more robust system by which users could receive information through web pages, citing Philyaw as an example of such instructions. Pet. 58. We concurred with Petitioner’s analysis in the Institution Decision (Dec. 22–24), but that was on a basis that the combination of Ferris, Lambert, and Gionis taught or suggested “machine-readable instructions.” As we are not persuaded, in view of the full record of evidence, that the combination teaches or suggests “machine-readable instructions,” we are also not persuaded that one of ordinary skill in the art would have added such instructions through Philyaw. The entire ground against claims 16 and 33 is predicated on Ferris teaching that the system sends “machine-readable instructions” to the user device, which we are not persuaded has been demonstrated by a preponderance of the evidence. We are similarly not persuaded with respect to the ground asserting the obviousness of claims 12, 17, 29, and 34 with the addition of Goldstein to the combination of Ferris, Lambert, and Gionis. As such, we determine that that Petitioner has not demonstrated by a preponderance of the evidence that claims 12, 16, 17, 29, 33, and 34 are unpatentable under 35

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U.S.C. § 103 as being obvious over combinations of Ferris, Lambert, Gionis, Philyaw, and Goldstein.

### III. CONCLUSION

We determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1–34 are unpatentable under 35 U.S.C. § 103 as being obvious over combinations of Ferris, Lambert, Gionis, Philyaw, and Goldstein, as discussed in Sections II.C and II.D above.

### VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that *no* claims of U.S. Patent No. 8,904,464 B1 have been shown to be *unpatentable*;

This is a Final Written Decision of the Board under 35 U.S.C. § 328(a). Parties to the proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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