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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC. and AMAZON WEB SERVICES, LLC,
Petitioner,

v.

PERSONALIZED MEDIA COMMUNICATIONS, LLC,
Patent Owner.

Case IPR2014-01530
Patent 7,864,956 B1

Before KARL D. EASTHOM, TRENTON A. WARD, and GEORGIANNA W. BRADEN, *Administrative Patent Judges*.

WARD, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318 and 37 C.F.R. § 42.73

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6(c), and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claim 6 of U.S. Patent No. 7,864,956 B1 (Ex. 1003, "the '956 patent") is unpatentable. We also determine that Patent Owner has not met its burden on its Motion to Amend regarding entry of proposed substitute claim 30, and thus, we deny the Motion to Amend.

A. Procedural History

Amazon.Com, Inc. and Amazon Web Services, LLC ("Petitioner") filed a Petition (Paper 1, "Pet.") to institute an *inter partes* review of claim 6 of the '956 patent. Personalized Media Communications, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). Pursuant to 35 U.S.C. § 314(a), we instituted an *inter partes* review of claim 6 on two grounds: (1) as unpatentable under 35 U.S.C. § 103 in view of Higgins[1] and Metcalfe[2] and (2) as unpatentable under 35 U.S.C. § 103 in view Furukawa.[3] *See* Paper 8 ("Dec. to Inst."), 23.

After institution of trial, Patent Owner then filed a Patent Owner Response (Paper 20, "PO Resp."), to which Petitioner filed a Reply (Paper 30, "Pet. Reply").

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[1] U.S. Patent No. 5,270,922 (Ex. 1007) ("Higgins").
[2] Metcalfe & Boggs, ETHERNET: DISTRIBUTED PACKET SWITCHING FOR LOCAL COMPUTER NETWORKS (Ex. 1009) ("Metcalfe").
[3] U.S. Patent No. 4,439,784 (Ex. 1008) ("Furukawa").

In addition, Patent Owner also filed a Contingent Motion to Amend (Paper 21), to which Petitioner filed an Opposition (Paper 31). Patent Owner then filed a Reply to Petitioner's Opposition to the Contingent Motion. Paper 38.

Patent Owner filed observations on the cross-examination of Petitioner's declarant (Paper 45), to which Petitioner filed a response (Paper 48). Petitioner filed observations and amended observations on the cross-examination of Patent Owner's declarant (Papers 46 and 50), to which Patent Owner filed a response (Paper 49).

An oral argument was held on Dec. 8, 2015. A transcript of the oral argument is included in the record. Paper 54 ("Tr.").

B. Related Proceedings

Petitioner informs us that the '956 patent is the subject of a lawsuit: *Personalized Media Commc'ns, LLC v. Amazon.com, Inc.*, No. 1:13-cv-1608-RGA (D. Del. filed Sept. 23, 2013). Pet. 1. According to Petitioner, the District Court's judgment in the lawsuit has been appealed to the Court of Appeals for the Federal Circuit as Appeal No. 15-2008. Paper 33, 1. Petitioner also informs us that six patents related to the '956 patent are the subject of concurrently-instituted *inter partes* reviews. Pet. 1; Paper 33, 1; *see* IPR2014-01527, IPR2014-01528, IPR2014-01531, IPR2014-01532, IPR2014-01533, and IPR2014-01534.

C. The '956 Patent

The '956 patent is titled "Signal Processing Apparatus and Methods" and generally relates to a unified system of programming communication.

Ex. 1003, Abstr. This proceeding is limited to claim 6 of the '956 patent.

Claim 6 is reproduced below:

> 6. A method of signal processing in a network to communicate at least some of a recommendation or solution to a plurality of subscribers, said method comprising the steps of:
>
> transmitting a signal to at least one of a plurality of stations;
>
> controlling a transmitter station on the basis of information communicated with said signal, said step of controlling said transmitter station comprising the steps of:
>
> selecting some generally applicable information in respect of a problem or interest;
>
> generating at least a portion of a module including said selected generally applicable information; and
>
> transmitting said module with at least a portion of said signal;
>
> controlling each of a plurality of receiver stations on the basis of information communicated with said signal, said step of controlling each of said plurality of receiver stations comprising the steps of:
>
> selecting some portion of said module;
>
> communicating receiver specific information to an output device; and
>
> recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest; and
>
> controlling at least one of said plurality of receiver stations on the basis of information communicated with said signal, said step of controlling said at least one receiver station comprising the steps of:
>
> inputting to a processor some data communicated with at least one of said signal and said module;
>
> causing said at least one receiver station to establish communications with a remote station; and
>
> communicating input to said remote station.

Patent Owner describes claim 6 as directed to a method for transmitting a signal including a module to a plurality of subscriber stations which results in communicating a recommendation regarding a problem or interest to a plurality of subscribers. PO Resp. 4–7.

Figure 7 of the ’956 patent, reproduced below, illustrates a subscriber station:

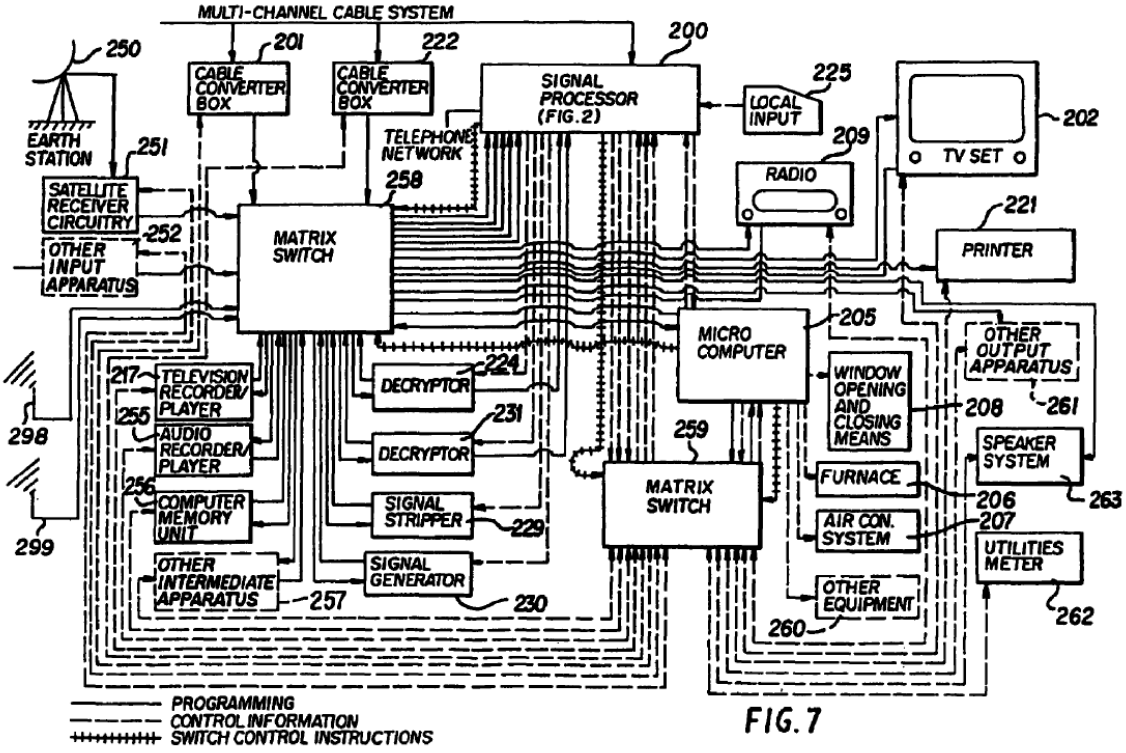


FIG. 7

As shown above in Figure 7, the ’956 patent discloses a subscriber station having satellite receiver circuitry 251 and microcomputer 205, television recorder/player 217, audio recorder/player 255, and computer memory unit 256. Ex. 1003, 202:14–32. The subscriber station further provides a TV monitor apparatus 202, printer 221, speaker system 263, and one or more other output systems 261. *Id*. at 202:45–48.

As support for claim 6, Patent Owner cites Example #11 disclosed in the specification of the '956 patent. PO Resp. 4–7. The cited "Summary Example #11" focuses on "farmers all over Europe mak[ing] plans regarding which crops to plant for the 2027 growing season." Ex. 1003, 274:58–59. Each farmer has a subscriber station, and the subscriber station stores the farm information for each farmer in a file, namely, MY_FARM.DAT on a disk for each subscriber station. *Id*. at 274:62–275:2. The recorded data includes the number and size of farmer's parcels of property, the soil conditions of the parcels, sunlight and shade information, history of crop rotation, and the farmer's farm equipment and financial resources. The system in example #11 disclosed in the specification of the '956 patent enables farmers to receive optimal planting plans given variables refined by the system and to respond with their own plans, causing data to be aggregated at the computer of the European master network origination and control station. *Id*. at 286:30–36.

II. DISCUSSION

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see In re Cuozzo Speed Technologies, LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015 ("Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation"), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*,

136 S. Ct. 890 (mem.) (2016). Under that standard, and absent any special definitions, we 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) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc)). The outcome in this case would not be altered under a broadest reasonable construction standard or a *Phillips* claim construction standard.

1. "module"

Petitioner alleges that the broadest reasonable interpretation of the term "module" includes "any unit of digital data regardless of the how the data is formatted." Pet. 17–18. Petitioner argues that the precise scope of the term "module" is indefinite, but that it must include at least the example of "modules" described in the specification of the '956 patent, including various types of digital data, such as street addresses, the cost of pork bellies, and binary video images, without specifying how the data is to be formatted. Pet. 17 (citing Ex. 1003, 189:1–19).

Patent Owner disagrees and argues the Board should construe the term "module" to mean "a discrete unit of a larger computer program that is executed and/or processed to perform a specific function." PO Resp. 13. As discussed below, we agree with Patent Owner that the specification of the '956 patent discloses the "module' as being "executed and/or processed to perform a specific function," but it would be contrary to the specification to require all modules to be a "discrete unit of a larger computer program."

Patent Owner argues that "module" is defined to mean a *part of program* and that programs are composed of independently developed

modules that are not combined until the program is linked. *Id.* (citing Ex. 2002, 2004). Contrary to Patent Owner's arguments, however, claim 6 does not recite a "program module," but simply a "module." As expressly identified in the specification of the '956 patent, there are many types of "modules," including a "program module" (s*ee* Ex. 1003, 186:10–21), an "object module" (*see* Ex. 1003, 188:34–47), and a "data module" (s*ee* Ex. 1003, 188:59–189:22). With respect to "data modules," the '956 patent specification discloses that the "data module of set of Q" can store a variety of data including, for example, "the street address of every one of said supermarket chain's markets in the local vicinity," "particular cost-of-a-trimmed-pork-belly-unit," and "binary video image information of several telephone numbers." Ex. 1003, 189:4–9.

As Patent Owner cited in its Response, the Federal Circuit has instructed that "claims should always be read in light of the specification and teachings in the underlying patent." PO Resp. 12 (emphasis omitted) (*quoting Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015)). Furthermore, the specification "is the single best guide to the meaning of a disputed term." *Translogic Tech.*, 504 F.3d at 1257 (*quoting Phillips*, 415 F.3d at 1315). Accordingly, we must construe the term "module" for claim 6 of the '956 patent in light of the disclosure in the '956 patent specification regarding "modules." In accordance with the '956 patent specification, there are various types of modules, such as program modules, object modules, and data modules; thus, the general term "module" cannot be construed to be limited to one of these types of modules.

Patent Owner acknowledges that the ’956 patent specification discloses a “data module” as a type of “module.” PO Resp. 15 (citing Ex. 1003, 248:58–249:30). Patent Owner fails, however, to persuasively explain how the disclosed “data module” would meet its proposed definition of a “module” being “a discrete unit of a *larger computer program* . . . .” For example, it is unclear how a “data module” containing the “particular cost-of-a-trimmed-pork-belly-unit” (Ex. 1003, 189:4–9) constitutes a discrete unit of larger computer program. Patent Owner fails to cite any disclosure in the specification of the ’956 patent that restricts a “module” to be “a discrete unit of a larger computer program.”

Although the specification of the ’956 patent does not limit modules to be a discrete unit of a larger computer program, the specification does disclose that each type of module, including program modules, object modules, and data modules, is executed by a computer to perform a specific function. *See* Ex. 1003, 186:10–17, 188:35–37, 188:59–61. For example, with respect to one embodiment of the data module, the ’956 patent specification discloses that “[e]xecuting the information of said intermediate generation set causes computer, 73, also to generate a particular associated data module.” *Id.* at 188:59–61. Similarly, with respect to one embodiment of the object module, the ’956 patent specification discloses that “computer, 73, compiles the information of said instance and places the resulting so-called ‘object module’ at particular memory.” *Id.* at 188:35–37. Likewise, with respect to one embodiment of the program module, the ’956 patent specification discloses that computer 73 compiles “formula-and-item-of-this-transmission information into a machine language program module; and

. . . link[s] said module to other program modules." *Id.* at 186:10–17. Accordingly, we are persuaded to modify our initial construction of "module" in the Decision on Institution as "a discrete unit of digital data" (Dec. to Inst. 8) to incorporate being executed by a computer to perform a specific function. Therefore, we construe the term "module," in view of the specification of the '956 patent, as "a discrete unit of digital data that is executed and/or processed to perform a specific function." We note that a discrete unit of digital data can be a set of commands or instructions that can be executed and/or processed to perform a specific function.

2. "recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest"

Claim 6 recites "recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest." Petitioner argues that the "recommending" limitation not be assigned patentable weight as printed matter. Pet. 6 (citing *In re Huai-Hung Kao*, 639 F.3d 1057 (Fed. Cir. 2011) and MPEP § 2111.05). In *Kao*, the Federal Circuit determined that the printed matter doctrine applied because there was "no functional relationship" between the disputed limitations (*Kao*, 630 F.3d 1073), but here the "recommending" step in claim 6 requires outputting the "subscriber specific action" in "video, audio, or print." Therefore, we are not persuaded by Petitioner that the printed matter doctrine is applicable to the "recommending" step in claim 6. Patent Owner argues, regarding this "recommending" step, the term "recommend" should be construed to mean

"to suggest a choice or a course of action." PO Resp. 19.[4] In support of its proposal, Patent Owner cites two dictionary definitions of the term "recommend." PO Resp. 20 (citing Exs. 2006, 2007). The first definition, from Cambridge Dictionaries, defines "recommend" as "to suggest that someone or something would be good or suitable for a particular job or purpose, or to suggest that a particular action should be done." Ex. 2006, 1. The second definition, from the American College Dictionary, defines "recommend" as "to advise a person, etc. to do something." Ex. 2007, 3. The specification of the '956 patent uses the term "recommended" to describe a proposed planting plan for minimum cost and maximum revenue:

> When accessed, the instructions of said module cause a microcomputer, 205, to analyze any given crop planting plan and generate information of a recommended planting plan and growing method that minimizes the expense of insect and other crop pest damage given maximum revenue.

Ex. 1003, 275:11–16. We determine the dictionary definitions of "recommend" comport with the use of that term in the specification '956 patent and with the ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech*, 504 F.3d at 1257. Therefore, we are persuaded by Patent Owner's proposed definition. Accordingly, we construe the claim 6 limitation of "recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest" to mean "suggesting a

[4] We note that claim 6 does not include the term "recommend" but recites "recommending."

choice or a course of action in outputted video, audio, or print subscriber specific action in respect to said problem or interest."

B. Principles of Law

To prevail in its challenges to the patentability of the claims, a petitioner must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented 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) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We analyze the instituted grounds of unpatentability in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

According to Petitioner's declarant, Dr. Charles J. Neuhauser, a person of ordinary skill in the art relevant to the '956 patent would have had "a Bachelor of Science in Electrical Engineering or a closely related field" and would have between three and five years of experience in

"implementation of communications systems and controlling these systems (or similar types of systems) through the use of computer technology." Ex. 1001 ¶ 33. Patent Owner's declarant, Dr. Samuel H. Russ ("Dr. Russ") stated that, a person of ordinary skill in the art relevant to the '956 patent would have had a bachelor's degree in digital electronics, electrical engineering, computer engineering, computer science, and two to five years of post-degree experience in a similar field. Ex. 2018 ¶ 27. Thus, the parties' assessments of the level of ordinary skill in the art are roughly equivalent.

Based on our review of the '956 patent, the types of problems and solutions described in the '956 patent and cited prior art, and the testimony of Petitioner's declarant and Patent Owner's declarant, we adopt Patent Owner's definition of a person of ordinary skill in the art at the time of the claimed invention. We note that the applied prior art also reflects the appropriate level of skill at the time of the claimed invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Asserted Obviousness of Claim 6 in View of Higgins and Metcalfe

Petitioner contends claim 6 of the '956 patent is unpatentable under 35 U.S.C. § 103 in view of Higgins and Metcalfe. Pet. 21–40; Pet. Reply 8–18. Patent Owner disputes Petitioner's position, arguing that the cited references fail to disclose all the elements required by the challenged claims. PO Resp. 23–45. We have reviewed the Petition, the Patent Owner's Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers and other record papers. We determine the record supports

Petitioner's contentions and adopt Petitioner's contentions discussed below as our own. For reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claim 6 of the '956 patent would have been obvious in view of Higgins and Metcalfe.

1. Overview of Higgins

Higgins is titled "System for Distributing Processing and Displaying Financial Information" and describes a data processing and communication system that distributes and displays financial market ticker, quotation, news and ancillary information via a plurality of stored program controlled work stations. Ex. 1007, Abstr. Figure 1B of Higgins illustrates one embodiment of the communication system, and is reproduced below:

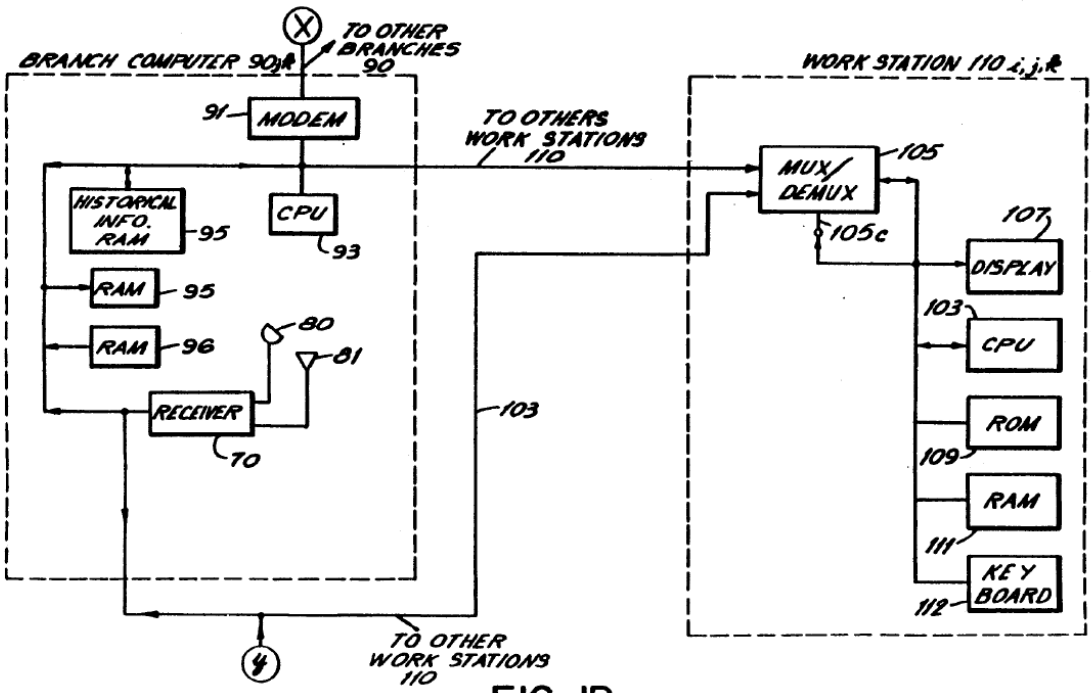


FIG. IB

As shown above in Figure 1B, Higgins discloses a networked computer system that provides displays of financial market information on a

work station, such as work station $110_{i,j,k}$ connected to branch computer 90_{jk} via cable 103. *Id*. at 2:27–41. Higgins discloses that ticker plant 35 receives information from the New York Stock Exchange and distributes this information to area computers 50 and branch computers 90. *Id*. at 2:44–61, Fig. 1A. The information from ticker plant 35 can include stock symbol 143, volume of shares 144, and trade price 145. *Id*. at 4:45–53. Higgins further discloses that work station $110_{i,j,k}$ can use the stock information to generate a ticker display. *Id*. at 4:45–53. Figure 2 of Higgins illustrates one embodiment of the ticker display, and is reproduced below:

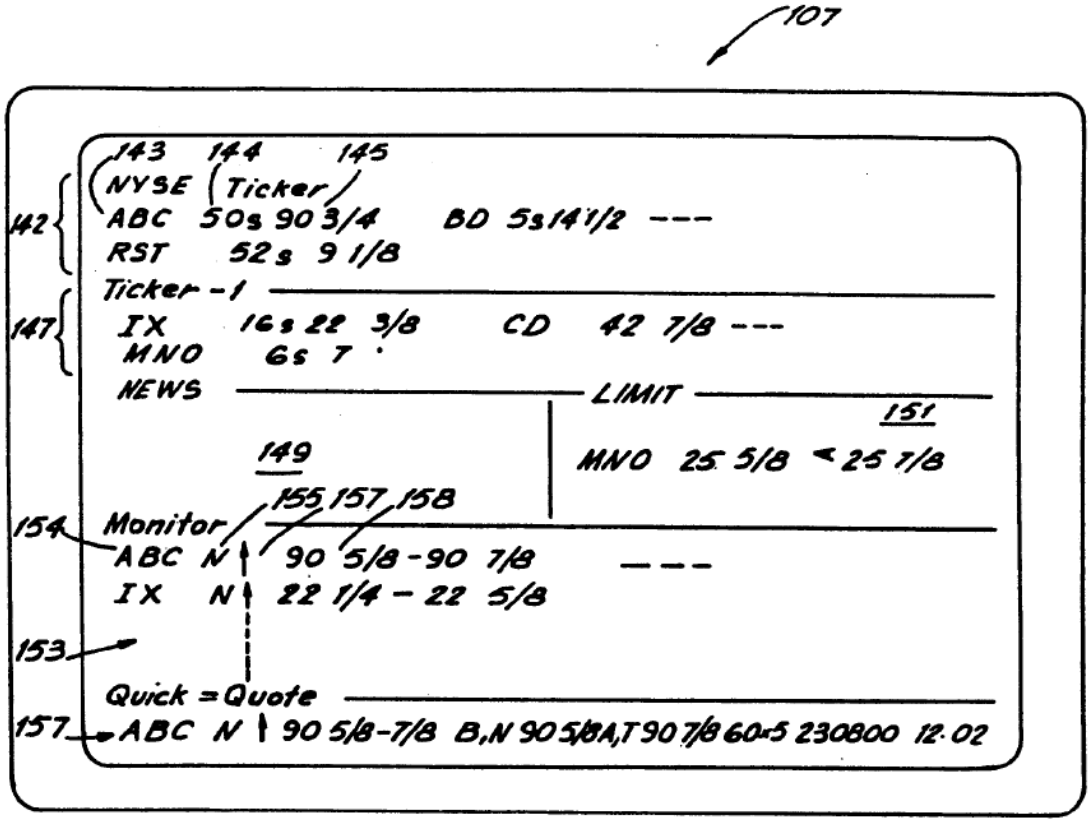


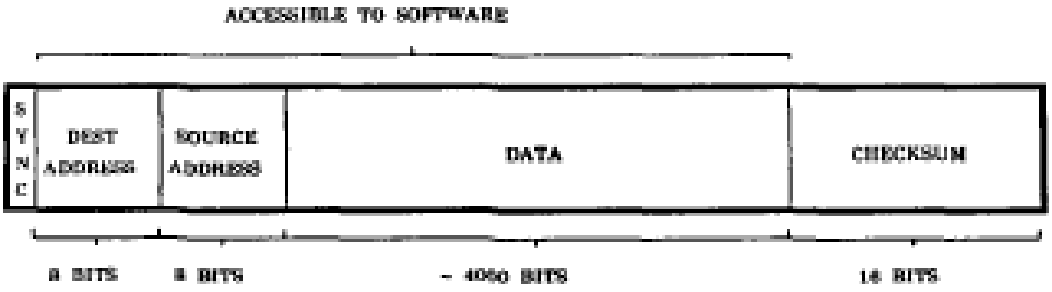
FIG. 2

As shown above in Figure 2, Higgins discloses a multi-window presentation in display 107 of work station $110_{i,j,k}$. *Id*. at 2:27–41. The system disclosed in Higgins enables security price limit alerts, which are user programmable and can be activated by the contents of the work station data base, and can be used by brokers and investors as buy or sell conditions. *Id*. at Abstr., 5:11–15. Figure 2 of Higgins above illustrates price limit alert 151. Furthermore, Higgins discloses one embodiment where a master database 12 stores the "name, account number, telephone number and all other desired information for all customers . . . for which the user's station has indicated an out-of-limit message." *Id*. at 9:7–14. For each price limit alert, the user may contact each such owner to determine if any action is desired "or to take such automatic action as may be appropriate." *Id*. at 9:14–17.

2. Overview of Metcalfe

Metcalfe is titled "Ethernet: Distributed Packet Switching for Local Computer Networks" and provides a general discussion of the characteristics of an Ethernet broadcast communication system, including its design principles, topology, control, and addressing principles. Ex. 1009, 395–397. Metcalfe describes the author's implementation of an Ethernet network of 100 nodes along a kilometer-long coaxial cable. *Id*. at 395. Figure 2 of Metcalfe illustrates the disclosed Ethernet packet, and is reproduced below:

Fig. 2. Ethernet packet layout.



As shown above in Figure 2, Metcalfe discloses an Ethernet packet with an 8 bit destination address field, an 8 bit source address field, a 4,000 bit data field, and a 16 bit checksum field. *Id*. at 399–400.

3. Analysis

Petitioner argues that claim 6 would have been obvious over Higgins and Metcalfe. Pet. 21–40. Petitioner argues that Higgins teaches the claimed "transmitting a signal to at least one of a plurality of stations" by transmitting a satellite or television signal that carries stock trade execution information from the ticker plant to the area and branch computers. *Id*. at 26 (citing Ex. 1007, 2:58–3:3). Furthermore, Petitioner argues that the claimed "controlling a transmitter station on the basis of information communicated with said signal" is taught by Higgins's disclosure of the branch computer being controlled on the basis of the stock trade execution information by distributing that information to the work stations connected to the branch computer. *Id*. at 26–27 (citing Ex. 1007, 8:38–43; Ex. 1001 ¶ 87). Additionally, Petitioner argues that the claimed "generating at least a portion of a module including said selected generally applicable information" is

taught by the data structure in Higgins and is used to communicate stock trade information from a branch computer to a work station. Pet. 28.

Petitioner concedes that Higgins does not specify a particular data structure protocol, but argues that any data structure that the Higgins protocol requires would be a "module." Pet. 28 (citing Ex. 1001 ¶¶ 93–94). Furthermore, Petitioner argues that even if Higgins does not inherently require a "module," it would have been obvious for one of ordinary skill in the art to implement the communication link in Higgins as an Ethernet connection, as disclosed in Metcalfe. Pet. 28–29 (citing Ex. 1009, Abstr.; Ex. 1001 ¶¶ 75–78, 89, 95–96). More particularly, Petitioner argues that a person of ordinary skill in the art would have used Ethernet to connect the branch computers and work stations in Higgins because "Ethernet was known to be simple, flexible, widely available, and relatively inexpensive." *Id*. at 29 (citing Ex. 1001 ¶77). We determine the record supports Petitioner's contentions and adopt them as our own.

Patent Owner argues that Petitioner's challenge fails for multiple reasons. Patent Owner argues that Higgins in view of Metcalfe fails to teach "controlling a transmitter station on the basis of information communicated with said signal," as recited in claim 6. PO Resp. 26. Specifically, Patent Owner argues that Higgins fails to teach that the signal from the originating station (Higgins's ticker plant) controls an intermediate transmission station (Higgins's branch computer 90) to create a module because reformatting the raw stock data would be done by software programmed into the branch computer and not the raw stock data itself. PO Resp. 26–27.

We are not persuaded by Patent Owner's argument. As identified by Petitioner, Patent Owner's argument falsely assumes that control by the software and control by the signal (or module) are mutually exclusive. Pet. Reply 9 (citing Ex. 1016, 69:22–25 (noting that Patent Owner's Declarant Dr. Russ agrees that a computer can be simultaneously controlled by multiple sources (i.e., a Windows operating system and a keyboard))). Furthermore, we determine that Patent Owner's arguments are not commensurate with the scope of claim 6, as the claim does not prohibit control of a transmitter station by multiple sources, but merely requires "controlling a transmitter station on the basis of information communicated with said signal." We determine that Higgins's disclosure of the branch computer being controlled on the basis of the stock trade information by distributing that information to the work stations connected to the branch computer teaches or suggests the claim 6 recitation of "controlling a transmitter station on the basis of information communicated with said signal." *See* Ex. 1007, 8:38–43; Ex. 1001 ¶ 87.

Second, Patent Owner argues that Higgins in view of Metcalfe fails to teach or suggest the claim 6 recitation of "controlling each of a plurality of receiver stations on the basis of information communicated with said signal," including "recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest." PO Resp. 28. With respect to the "recommending" step of claim 6, Petitioner argues that this is taught or suggested by Higgins disclosure of a workstation outputting price limit alerts, which constitute a recommendation to a broker to take action on the stock that triggered the alert and relates to a specific

stock selected by the broker. Pet. 32–33 (citing Ex. 1007, 1:51–54, 5:11–15, 5:41–43, 9:3–17; Ex. 1001 ¶ 108). Furthermore, Petitioner argues that the price limit alerts are "in outputted video" because they are displayed on a work station's CRT. Pet. 33 (citing Ex. 1007, 2:15–18, 5:41–43). Patent Owner counters that the disclosure in Higgins is deficient because its price limits are not recommendations to buy, sell, or hold stock but merely provide information from which a recommendation can be inferred. PO Resp. 30–31.

As discussed above, we construe "recommending in outputted video, audio, or print subscriber specific action in respect to said problem or interest" to mean "suggesting a choice or a course of action in outputted video, audio, or print subscriber specific action in respect to said problem or interest." Therefore, as provided by Patent Owner's own proposed construction, this step does not require an explicit statement of a specific action, but rather a *suggestion* of a choice of a course of action. PO Resp. 19 ("'recommend' means to 'to suggest a choice or course of action'"). We determine that Higgins's disclosure of a workstation outputting price limit alerts *suggests* a choice or course of action, because it suggests a broker take action on the stock that triggered the alert and relates to a specific stock selected by the broker to be the subject of the alert. *See* Ex. 1007, 1:51–54, 5:11–15, 5:41–43, 9:3–17. Dr. Neuhauser testified that the price limit alert disclosed in Higgins suggests several specific actions that a broker could take in response to a price limit alert, including buying or selling the stock or contacting customers who own the stock. Ex. 1001 ¶ 108 (citing Ex. 1007,

5:11–15, 9:3–17). We determine that the disclosures in Higgins cited by Petitioner teach or suggest the recommending step of claim 6.

Third, Patent Owner argues that Higgins in view of Metcalfe fails to teach the claim 6 step of "generating at least a portion of a module including said selected generally applicable information." PO Resp. 33. Specifically, Patent Owner argues that the proposed combination fails to teach generating a module that is a "discrete unit of a larger computer program that is executed and/or processed to perform a specific function," in accordance with Patent Owner's proposed construction of "module." *Id*. As discussed above, we do not adopt Patent Owner's construction of "module" but construe "module" as "a discrete unit of digital data that is executed and/or processed to perform a specific function." Petitioner proposes that the generation of an Ethernet packet according to Metcalfe would result in a "module including said selected generally applicable information" to communicate the trade information disclosed in Higgins from a branch computer to a work station. Pet. 28–29 (citing Ex. 1001 ¶¶ 75–78, 89, 95–96; Ex. 1007, 3:1–3; Ex. 1009, 395). Petitioner argues that this packet is generated at the branch computer before it is transmitted to the work stations. Ex. 1001 ¶¶ 94, 96. In view of Higgins's disclosure of regarding the processing of the trade information, including the stock symbol, prices of the stock, and volume traded (Ex. 1007, 4:45–49, 2:24–47), to generate a price limit alert to be displayed on the work station CRT in Higgins (Ex. 1007, Fig. 2), we determine that Higgins in view of Metcalfe teaches or suggests "generating at least a portion of a module including said selected generally applicable information," wherein a "module" is construed to mean

"a discrete unit of digital data that is executed and/or processed to perform a specific function."

Fourth, Patent Owner argues that the rationale for the combination of Higgins and Metcalfe provided by Petitioner is insufficient because Petitioner provides a conclusory statement without a well-reasoned explanation to support a finding of obviousness. PO Resp. 38–39. Specifically, Petitioner argues that, with respect to Higgins, the "module" is the data structure used to communicate trade information from a branch computer to a work station over cable 103. Pet. 28 (citing Ex. 1001 ¶ 93). Figure 1B of Higgins below illustrates the cable 103 connection between work station $110_{i,j,k}$ and branch computer 90_{jk}. Ex. 1007, Fig. 1B.

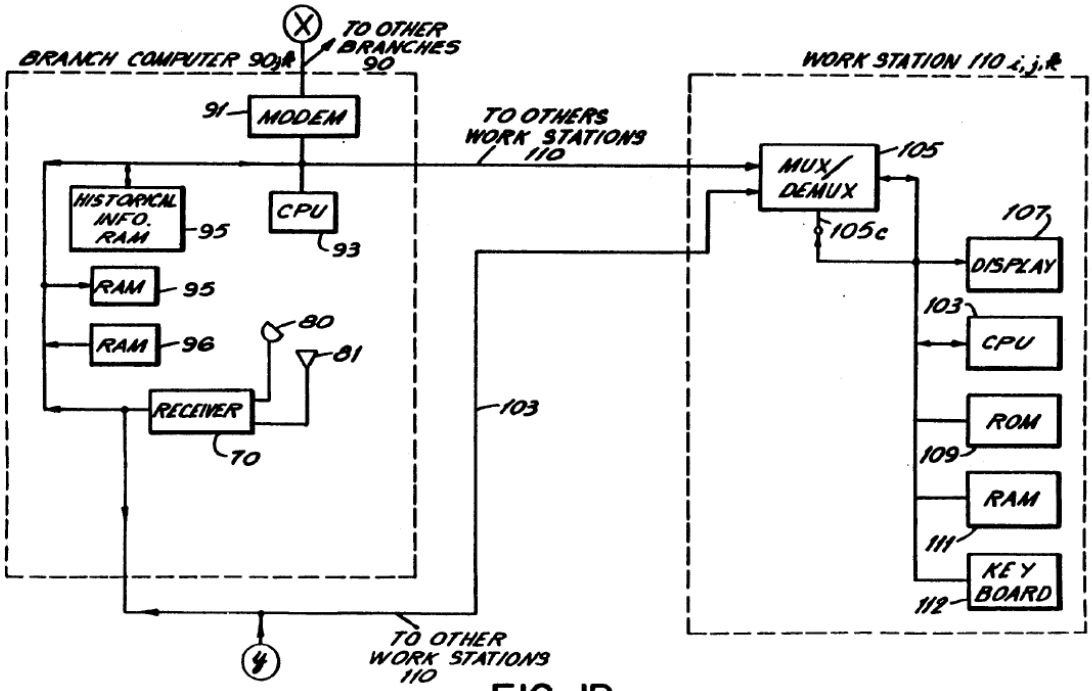


FIG. IB

Additionally, Petitioner contends that, although Higgins does not specify a protocol, it would have been obvious to a person of ordinary skill in the art

to implement Higgins cable 103 as an Ethernet connection, in which case the "module" would be an Ethernet packet as taught in Metcalfe. Pet. 28–29 (citing Ex. 1007, 3:1–3, Fig. 2; Ex. 1001 ¶¶ 75–78, 89, 95–96). Dr. Neuhauser adds that a person of ordinary skill in the art would have recognized Ethernet as an obvious choice for implementing the bi-directional communication that Higgins discloses between the branch computer 90 and work station 110 because Ethernet was widely available and relatively low-cost and was widely known to simple and flexible. Ex. 1001 ¶ 77. Dr. Neuhauser further states that this Ethernet implementation could have been implemented with off-the-shelf components. *Id*. ¶ 78.

Patent Owner argues that this rationale by Petitioner is insufficient because it relies upon an unsupportable inherency argument. PO Resp. 37 (citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) ("The mere fact that a certain thing may result from a given set of circumstances is not sufficient.")). Patent Owner's reliance upon *In re Robertson* is misplaced, as that quoted statement from *In re Robertson* concerned an analysis of anticipation by inherency, not an analysis of obviousness. *See In re Robertson*, 169 F.3d at 745. Unlike anticipation, in an obviousness analysis "a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418. A "person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id*. at 420. The fact that Higgins failed to provide an express description of the data structure used to communicate trade information from a branch computer to a work station over cable 103 is

not fatal to Petitioner's obviousness challenge. As the Federal Circuit described in *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, it is proper to rely upon "common knowledge and common sense of the person of ordinary skill in the art *without any specific hint or suggestion in a particular reference*." 587 F.3d 1324, 1328 (Fed. Cir. 2009) (emphasis added) (quoting *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969)). Patent Owner concedes that "[o]f course, there will be 'some protocol' for communication[] of stock data between branch computers and work stations." PO Resp. 38; *see* Ex. 1016, 129:17–24. Furthermore, Dr. Neuhauser testifies that a "person of ordinary skill would recognize Ethernet as an obvious choice for implementing the bi-directional communication that Higgins discloses between the branch computer (90) and the work stations (110)" as it was simple, flexible, widely available and relatively low-cost. Ex. 1001 ¶ 77. We agree with Petitioner's rationales that Higgins requires a data structure to communicate trade information from branch computer 90 over cable 103 to work stations 110 and a person of ordinary skill in the art would have recognized Ethernet as an appropriate data structure for such communication. Upon review, we determine Petitioner has presented sufficiently an "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" and we adopt its contentions as our own. *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)) (internal quotation marks omitted).

Patent Owner further argues that the combination of Higgins and Metcalfe is improper because Metcalfe states that "[w]e expect that a reasonable maximum network size would be on the order of 1 kilometer"

(Ex. 1009, 399), and Patent Owner argues that the financial systems of Higgins are expected to span a large topography of hundreds of miles (PO Resp. 39 (citing Ex. 2018 ¶¶ 103–104)). Patent Owner's argument fails to provide any disclosure in Higgins that its network must extend hundreds of miles but simply offers the opinion of Dr. Russ that systems like those in Higgins are "[t]ypically . . . distributed over a large geographic area." *See* Ex. 2018 ¶ 103. Contrary to Patent Owner's argument, Dr. Neuhauser provides that Ethernet would only be used to communicate within the branch office of Higgins, not across the country. Ex. 1017 ¶ 34. We are also unpersuaded by Patent Owner's argument because Patent Owner fails to identify any distance restrictions placed upon the communication system in Higgins and the statement in Metcalfe about the reasonable network size (*see* Ex. 1009, 399) is directed to the particular implementation in Metcalfe, not a theoretical maximum distance for Ethernet.

Patent Owner also argues that Metcalfe discloses that, with Ethernet, "packets are delivered only with high probability"; thus, some packets will not reach their destination. PO Resp. 40 (citing Ex. 1009, 396). Therefore, Patent Owner argues that a person of ordinary skill would not implement Ethernet in the Higgins financial system because packets might be lost. PO Resp. 40. Patent Owner's argument fails to recognize that in Ethernet systems, packets are transmitted when errors or collisions occur; thus, as described by Dr. Neuhauser, an Ethernet system is designed to correct packet loss through retransmission and the transmission latency of Ethernet is far less than other methods, such as the use of the vertical blanking interval in a television signal. Ex. 1017 ¶ 36. Furthermore, Petitioner

counters Patent Owner's assertion that Ethernet is unsuitable for financial applications by citing uses of Ethernet systems in the stock-trading industry, such as disclosed in U.S. Patent No. 6,105,005 to Merrill Lynch (the assignee of Higgins) describing the use of Ethernet in connecting workstations in a stock-trading computer system. *See* Ex. 1019, 4:3–4.

Patent Owner also argues that an Ethernet packet is not a "module." PO Resp. 41. Specifically, Patent Owner argues that an Ethernet transmission is simply a passive medium for the propagation of digital signals. PO Resp. 42 (Ex. 1009, 397). Furthermore, Patent Owner argues that the branch computer in Higgins would not generate Ethernet packets but would simply forward these packets. PO Resp. 43. As discussed above, we construe a "module" as "a discrete unit of digital data that is executed and/or processed to perform a specific function." Even assuming that an Ethernet transmission is a passive medium, Patent Owner fails to persuasively identify how an Ethernet packet generated to communicate the trade information disclosed in Higgins from a branch computer to a work station would not constitute "a discrete unit of digital data that is executed and/or processed to perform a specific function." Furthermore, Petitioner counters the argument that Higgins's branch computer simply forwards packets by identifying that Higgins's branch computer uses different types of network connections, as incoming data is received via television link 81 or microwave link 80 and outgoing data is transmitted via cable 103. Ex. 1001 ¶ 94; Ex. 1017 ¶ 41. Dr. Neuhauser identifies that the branch computer would have to process the incoming data to produce the Ethernet packets to be transmitted over cable 103. Ex. 1017 ¶ 41. Accordingly, we are

unpersuaded by Patent Owner's argument that the branch computer in Higgins is simply forwarding packets.

Furthermore, Patent Owner argues that the trade information in Higgins does not control the branch computer and, thus, Higgins in view of Metcalfe fails to teach or suggest "controlling a transmitter station on the basis of information communicated with said signal," as recited in claim 6. PO Resp. 44. Specifically, Patent Owner argues that if the branch computer received data that was garbled, or unintelligible, the branch computer would still forward that data to work stations. PO Resp. 44 (citing Ex. 2018 ¶ 83). Petitioner responds that the fact that the branch computer responds to both correct and incorrect input does not negate control, as the branch computer would generate Ethernet packets as a direct response to receiving trade information from the ticker plant. Pet. Reply 18 (citing Ex. 1017 ¶ 15). We agree that controlling step of claim 6 is taught or suggested by Higgins in view of Metcalfe as proposed by Petitioner and adopt its contentions as our own.

Based on the foregoing discussion and the record, including the secondary evidence of nonobviousness discussed below, Petitioner demonstrates by a preponderance of the evidence that claim 6 would have been obvious in view of Higgins and Metcalfe.

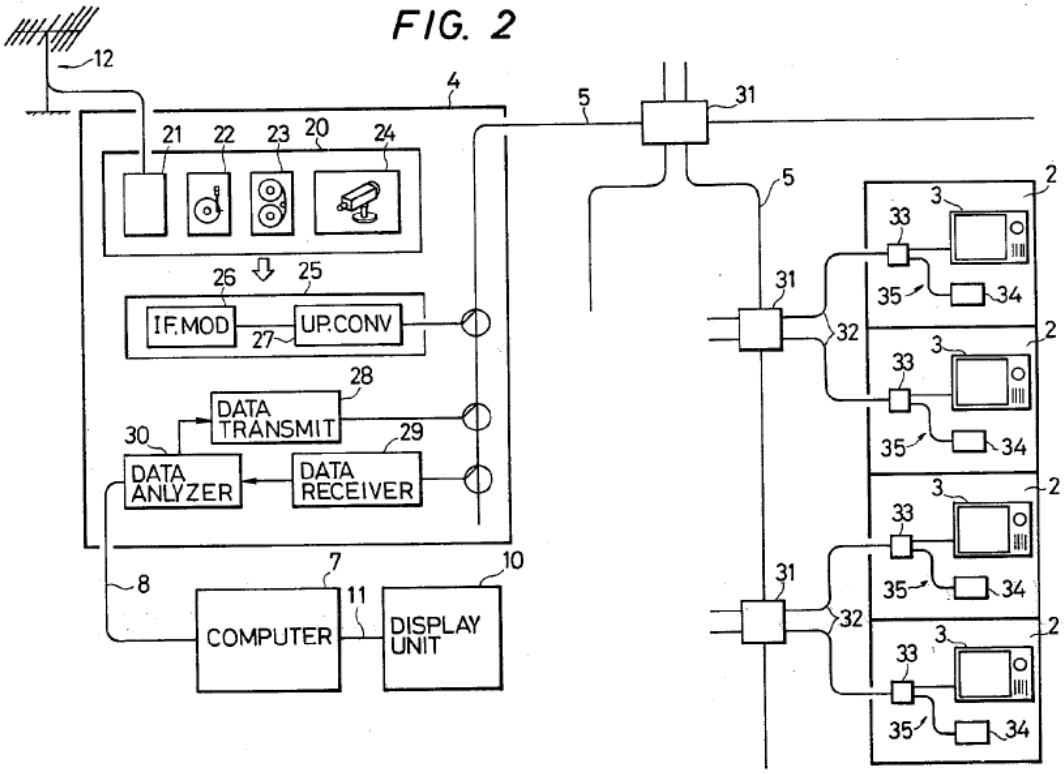
E. Asserted Obviousness of Claim 6 in View of Furukawa

Petitioner contends claim 6 of the '956 patent is unpatentable under 35 U.S.C. § 103 in view of Furukawa. Pet. 40–58; Pet. Reply 18–22. Patent Owner disputes Petitioner's position, arguing that the cited references fail to

disclose all the elements required by the challenged claims. PO Resp. 45–58. We have reviewed the Petition, the Patent Owner's Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers and other record papers. We determine the record supports Petitioner's contentions and adopt Petitioner's contentions discussed below as our own. For reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claim 6 of the '956 patent would have been obvious in view of Furukawa.

1. Overview of Furukawa

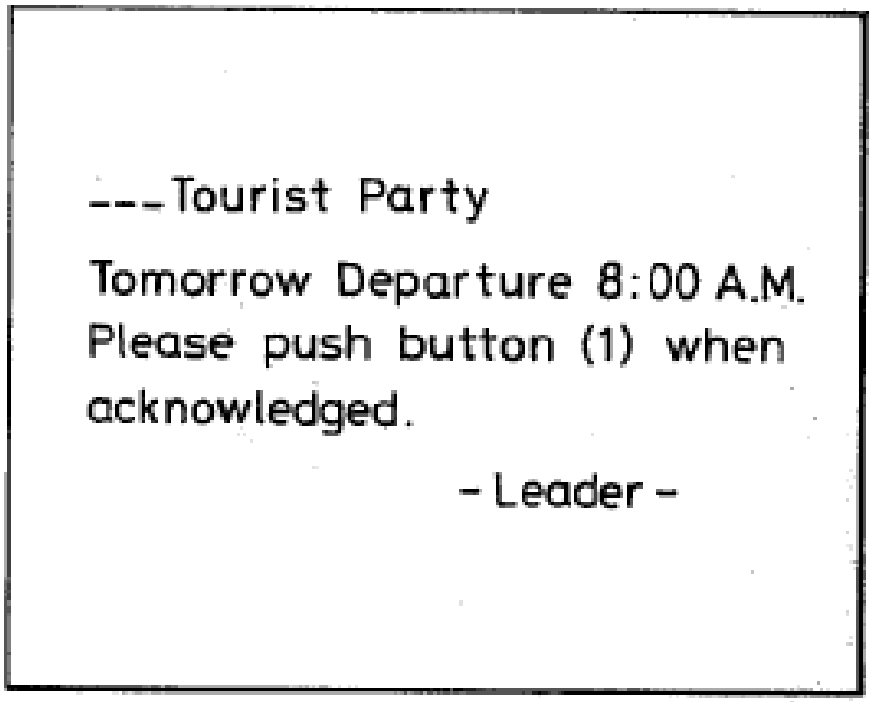
Furukawa is titled "Power Cutting Device For Terminal Units of CATV System" and discloses a Community Antenna Television ("CATV") system providing a terminal unit including a television set in the guest rooms of a hotel, such that the guests can observe various programs on the television sets. Ex. 1008, 2:6–9. The CATV system provides a central facility enabled to remotely control the television sets with a down-data signal. *Id*. at 1:35–43. Figure 2 of Furukawa, illustrating the CATV system, is reproduced below:



As shown above in Figure 2, Furukawa discloses center 4 that includes a display unit 10, a data transmitter 28, and data receiver 29 in communication with a data analyzer in further communication with a computer 7. *Id*. at 2:49–61. The center 4 can transmit video and data over cable 5 to a terminal unit 35, located in guest room 2, which includes a television set 3, a main unit 33 and a control unit 34. *Id*. at 2:62–68. The main unit 33 receives down-data signal (g), which includes instructions. *Id*. at 3:10–14. In one embodiment, the CATV system is used to implement a spot channel to allow particular information to appear on the television set, such as informing all of the hotel guests of a fire. *Id*. at 7:32–36. In another embodiment, it is necessary to inform a tourist party of a particular message. *Id*. at 7:58–61.

Figure 8 of Furukawa, illustrating such a message on a television set, is reproduced below:

FIG. 8



As shown above in Figure 8, Furukawa discloses the delivery of a message ("Tourist Departure 8:00A.M. Please push button (1) when acknowledged.") via the spot channel to particular members of a tourist party. *Id*. at 7:59–65. As the rooms 2 for particular guests in the tourist party are known, only the terminal units 35 corresponding to the rooms 2 of the tourist party "are forcibly operated so that the information is transmitted to the tourist party only." *Id*. at 7:65–67. Specifically, center 4 transmits a down-data signal to terminal units 35 and the signal includes answer-requesting data to determine whether the guest has received the information. *Id*. at 8:6–10. The guest depresses the response button 47 to acknowledge

receipt of the message and the up-data signal to center 4 includes the address number of the responding terminal unit 35. *Id*. at 8:20–28.

2. Analysis of Asserted Obviousness Ground in View of Furukawa

Petitioner argues that claim 6 would have been obvious over Furukawa and the knowledge of one of ordinary skill in the art. Pet. 8, 40–57. Petitioner argues that Furukawa teaches the claimed "transmitting a signal to at least one of a plurality of stations" by transmitting a signal that specifies the addresses of the terminal units that should receive a spot channel instruction. *Id*. at 45 (citing Ex. 1008, 7:61–68; Ex. 1001 ¶ 42). Furthermore, Petitioner argues that the claimed "controlling a transmitter station on the basis of information communicated with said signal" is taught by Furukawa's disclosure that the center is controlled on the basis of the addresses associated with a spot message, as it uses them to transmit a message to specific terminal units. *Id*. at 46–47 (citing Ex. 1008, 7:61–68; Ex. 1001 ¶ 148). Additionally, Petitioner argues that the claimed "generating at least a portion of a module including said selected generally applicable information" is taught by the down-data signal transmitted from the center when a spot channel message is available. Pet. 48 (citing Ex. 100[8], 7:40–51).[5]

Petitioner argues that Furukawa's disclosure of a down-data signal having serially encoded data, including the addresses of the terminal units, meets the "module" limitation in claim 6. Pet. 48 (citing Ex. 1008, 7:40–51,

[5] Although the Petition cites Ex. 1007, this appears to be a typographical error. *See* Pet. 48.

61–65; Ex. 1001 ¶ 153). Furthermore, Petitioner argues that a person of ordinary skill in the art would recognize that any module which is transmitted, including the content of the down-data signal, must first be generated in accordance with the claim 6 recitation of "generating at least a portion of a module." Pet. 48 (citing Ex. 1001 ¶ 153). We determine the record supports Petitioner's contentions and adopt them as our own.

Patent Owner argues in response that Petitioner's challenge fails for multiple reasons. Patent Owner argues that Petitioner improperly relies upon the knowledge of one of ordinary skill in the art as a source of prior art to supply claim limitations missing from Furukawa. PO Resp. 48. More particularly, Patent Owner argues that the expert cannot be the source of prior art, but the expert can act as a prism through which to evaluate the prior art. *Id*. We are not persuaded by Patent Owner's argument that Petitioner relies upon its Declarant as a source of prior art. An obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418. The portions of Dr. Neuhauser's Declaration relied upon by Petitioner merely describe how one of ordinary skill in the art would view the disclosure in Furukawa. Pet. 48 (citing Ex. 1001 ¶ 153). Contrary to Patent Owner's arguments, Dr. Neuhauser does not introduce evidence improperly, but rather explains Furukawa and how one of ordinary skill in the art would view Furukawa. *Id*. Accordingly, we are not persuaded by Patent Owner's argument.

Patent Owner argues that Petitioner fails to establish that the CATV system of Furukawa teaches or suggests "controlling a transmitter station on the basis of information communicated with said signal." PO Resp. 49. Petitioner alleges that "controlling a transmitter station on the basis of information communicated with a signal" is taught by Furukawa's disclosure that the center is controlled on the basis of the addresses associated with a spot message, as it uses them to transmit a message to specific terminal units. Pet. at 46–48 (citing Ex. 1008, 7:61–68; Ex. 1001 ¶ 148). Patent Owner argues in response that because center 4 in Furukawa controls the terminal unit by sending addressed messages to the terminal unit, the addresses control the terminal units, not the center 4. PO Resp. 50. More particularly, Patent Owner argues that the operations performed by the central facility are independent of the terminal unit address because the center broadcasts the addresses and the spot messages to all the terminal units; thus, "there is no address-specific behavior on the part of the center." PO Resp. 51 (citing Ex. 2018 ¶ 20).

Dr. Neuhauser responds that even if center 4 is simply forwarding the address to the terminal unit, center 4 must form the spot channel instruction with the address; thus, center 4 is necessarily controlled "on the basis of" the address information. Ex. 1017 ¶ 53. Furthermore, as to Patent Owner's argument that the addresses only control the terminal units 35 and not the center 4, Dr. Neuhauser responds that there is no reason for a person of ordinary skill in the art to think that an address could not control both the center and the terminal units. *Id.* ¶ 54. We agree that Furukawa discloses transmitting the spot channel instructions to at least the terminal units

designated by certain addresses (Ex. 1008, 7:61–68); thus, center 4 is controlled by these addresses.

Patent Owner also argues that center 4 does not receive the addresses. PO Resp. 50. Similarly, Patent Owner also argues that Furukawa fails to teach or suggest the claim 6 recitation of "transmitting a signal to at least one of a plurality of stations," because Furukawa merely states that the addresses and corresponding room numbers "are known." PO Resp. 58 (quoting Ex. 1008, 7:61–68). Patent Owner fails to identify, however, how center 4 obtains these addresses. As identified by Dr. Neuhauser, Furukawa discloses that there are a number of different operations that can be performed with respect to individual terminal units, including (a) summarizing channel usage charges on display unit 10, (b) forcing reception of a spot channel, (c) summarizing spot channel acknowledgments, (d) enabling and disabling reception of special channels, (e) summarizing special channel questionnaire responses on display unit 10, and (f) disabling television sets when the guest is our or the room is empty. Ex. 1017 ¶ 47 (citing Ex. 1008, 2:32–46, 10:51–11:6, 7:40–56, 8:28-36, 8:56–63, 9:28–34, 9:44–62, 10:17–29). Dr. Neuhauser further states that a person of ordinary skill in the art would understand that the natural place to control these terminal unit operations, such as enabling and disabling television service based on room occupancy, would be at display unit 10 of center 4, located at the front desk of the hotel. Ex. 1017 ¶ 48 (citing Ex. 1008, 2:20–22). We agree with Petitioner that one of ordinary skill in the art would understand that, given the large number of operations provided and the constantly changing nature of the services at the hotel, center 4 would receive the

addresses corresponding to certain guest rooms subject to a particular operation. Based on the foregoing, we determine Furukawa teaches or suggests "transmitting a signal to at least one of a plurality of stations."

Patent Owner also argues that Furukawa fails to teach or suggest "selecting some generally applicable information; generating at least a portion of a module including said generally applicable information." PO Resp. 53. Specifically, Patent Owner argues that Furukawa does not disclose how the spot channel message is selected. *Id*. at 54. Petitioner alleges, however, that in the Furukawa, the spot channel message is chosen from among other types of instructions, such as a power off instruction, that the center is capable of sending. Pet. Reply 21 (citing Ex. 1001 ¶ 151; Ex. 1008, 1:34–42, 8:56–57, 10:3–6). For example, Furukawa discloses that "four special channels are outputted" and these channels "cannot be received even by operating the channel buttons 46" but "can be received upon a particular instruction from the data transmitter 28 in the center 4." Ex. 1008, 8:51–57. Dr. Neuhauser states that to a person of ordinary skill in the art, this would indicate that the data transmitter is selecting among possible instructions to provide the particular one it places in the down-data signal. Ex. 1017 ¶¶ 59–60. We agree that the selection of spot channel message in Furukawa teaches or suggests "selecting some generally applicable information."

Furthermore, Patent Owner argues that the address numbers of the terminal units and the down-data signal are distinct. PO Resp. 56. Petitioner counters that Patent Owner's argument is contrary to the express disclosure in Furukawa that describes "incorporating address information[]

in the down-data-signal" and that "address information contained in said down-data signal." Pet. Reply 21 (emphasis omitted) (quoting Ex. 1008, Abstract, 12:4–17). Given these express disclosures in Furukawa, we are not persuaded that the address numbers and down-data signal are distinct.

Patent Owner also argues that the spot channel message is itself transmitted to the terminal stations and is not used in "generating at least a portion of a module including said generally applicable information," as recited in claim 6. PO Resp. 55. More particularly, Patent Owner argues that there is "no disclosure in Furukawa of any computer program that is generated or transmitted from any of the described stations." *Id*. at 56. First, we note that claim 6 requires only "generating *at least a portion* of a module" (emphasis added). Furthermore, as discussed above, we do not adopt Patent Owner's proposed construction of module that requires it to be a "discrete unit of a *larger computer program*." Rather, we construe module to mean "a discrete unit of digital data that is executed and/or processed to perform a specific function." Petitioner alleges that Furukawa discloses generating a module by disclosing a down-data signal that is transmitted from the center when a spot channel message is available, the signal including the addresses of the relevant terminal units and the spot channel message. Pet. 48 (citing Ex. 1008, 7:40–51, 7:61–65; Ex. 1001 ¶ 153). Dr. Neuhauser further testifies that, in one embodiment, the combining of the two signal components, the addresses and the spot channel message, at the center 4 would constitute the claimed "generating at least a portion of a module." Ex. 1017 ¶ 67. We determine the records supports Petitioner's contentions and adopt them as our own.

Based on the foregoing discussion and the record, including the secondary evidence of nonobviousness discussed below, Petitioner demonstrates by a preponderance of the evidence that claim 6 would have been obvious in view of Furukawa.

F. Secondary Considerations

1. Commercial Success: Licensing

Relying on testimony by its declarant, Mr. Holtzman, Patent Owner contends that "PMC has numerous licensees to the '956 Patent, as well as to other patents in the portfolio." PO Resp. 59 (citing Ex. 2029). Petitioner replies that Patent Owner fails to show a nexus from Patent Owner's portfolio of licensees to the invention defined by claim 6. Pet. Reply 24. Petitioner's argument is persuasive. Patent Owner's single statement and blanket citation to an entire exhibit, Ex. 2029, without more, does not constitute a sufficient argument showing how any licenses demonstrate unobviousness of challenged claim 6.

In cases in which the proffered evidence of commercial success constitutes licenses, rather than sales of products embodying the invention, the licenses may have been taken only because they were cheaper than defending an infringement suit or for other business reasons. *See EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 908–09 (Fed. Cir. 1985) ("[I]t is not unusual to see astute businessmen capitalize on [a licensing program for an otherwise invalid patent] by erecting a temporarily successful licensing program thereon. . . . They sometimes succeed because they are mutually beneficial to the licensed group or because of business judgments that it is cheaper to take licenses than to defend infringement

suits, or for other reasons unrelated to the unobviousness of the licensed subject matter.").

Similar to the characterization in *EWP*, Mr. Holtzman notes that some of the provided licenses to the "'956 Patent family," or "the '956 Patent, among other PMC patents," included a "substantial payment" in "settlement of litigation" or with knowledge of pending *inter partes* reviews. *See* Ex. 2029 ¶¶ 16–24. Mr. Holtzman also contends that some companies made equity investments in addition to licenses, and also "many of the license amounts are orders of magnitude above the cost of defense in an infringement action." *Id*. ¶¶ 25–26.

We find that this testimony about "substantial payments" relative to "cost of defense," and equity investments, lacks a requisite factual support and fails to delineate anything specific to the '956 patent family or the '956 patent, let alone the challenged claim of the '956 patent. The testimony is entitled to little weight. Even affording it some weight, the testimony does not address whether or not any settlement or license has anything to do with the particular merits of the challenged claim of the '956 patent. The testimony, at face value, at most shows that a license to the whole '956 patent family may cost substantially more than defending any litigation with respect to one of the patents in the '956 patent family, but it does not even mention specific litigation for the '956 patent or relative cost to a license thereto. Also, litigation advances with certain risk whereas a license provides a known outcome.

The tenuous testimony fails to show "affirmative evidence of nexus." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir.

2004). Patent Owner must demonstrate "a nexus between the *merits of the invention* and the licenses of record," otherwise the evidence of licenses garners little weight. *In re GPAC Inc.*, 57 F.3d 1573 at 1580 (Fed. Cir. 1995) (emphasis added) (citation omitted). "[W]ithout a showing of [a] nexus, 'the mere existence of . . . licenses is insufficient to overcome the conclusion of obviousness.'" *In re Antor Media Corp.*, 689 F.3d 1282, 1293 (Fed. Cir. 2012) (quoting *Iron Grip Barbell*, 392 F.3d at 1324).

In *GPAC Inc.*, 57 F.3d at 1580, the court found that "in affidavits reciting the license history of the '111 patent, GPAC did not establish which claims(s) of the patent the licensing program incorporates, [and thus] GPAC has not shown that licensing of [applicant's] invention arose out of recognition and acceptance of the subject matter claimed." Like the applicants with licenses in *EWP Corp*, *GPAC*, and *Antor Media*, Patent Owner has not shown a nexus to the challenged "subject matter claimed": Mr. Holtzman's testimony lists patent family licenses and revenue, but does not discuss the merits of the challenged claim as they relate to any particular license for the '956 patent in the portfolio of licenses. *See* PO Resp. 59 (citing Ex. 2029). Moreover, only claim 6 of the '956 patent has been challenged.

The cited testimony of Mr. Holtzman does not establish whether a specific license (or licensing clause, etc.) for the '956 patent occurred because of the merits of the challenged claim, the merits of unchallenged claims, for other patented inventions, or for other economic reasons related to the whole '956 patent family. The evidence, at best, implies that some settlements included licenses for the '956 patent family perhaps to avoid

some litigation for a patent or patents in the family, or that equity investments may have occurred based on the company itself, PMC. *See* Ex. 2029 ¶¶ 8–27. Mr. Holtzman's summary coalesces with our summary: "This success is attributable not to any particular feature by itself, but rather to the combination of features of PMC's inventions." *Id*. ¶ 27.

Accordingly, Patent Owner's licensing program evidence is afforded little weight in showing that the challenged claim in the '956 patent would not have been obvious.

2. Industry Praise

Industry praise for an invention may provide evidence of nonobviousness where the industry praise is linked to the claimed invention. *See Geo. M. Martin Co. v. Alliance Mach. Sys. Intern. LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010); *Asyst Techs., Inc. v. Emtrack, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008). Patent Owner asserts that "PMC has received professional acclaim and industry recognition of its inventions. Additionally, there are numerous patents and publications that cite to the '956 Patent family." PO Resp. 59 (citing Ex. 2029).

Petitioner replies that Patent Owner fails to provide any nexus between the forward citations and the invention cited in claim 6. Pet. Reply 25. Petitioner's argument is persuasive. Patent Owner's brief statements and blanket citation to an entire exhibit, Ex. 2029, without more, does not constitute a sufficient argument showing as to how any alleged praise demonstrates unobviousness with respect to a challenged claim in the '956 patent. *See* PO Resp. 60.

Similar to its licensing argument, Patent Owner does not provide any analysis explaining how professional acclaim for the ’956 patent family, including purported evidence of value or “numerous” citations, constitutes praise with nexus to a feature of the challenged claim in the ’956 patent. The arguments and cited evidence fail to show how the challenged claim of the ’956 patent would have been unobvious. *See* Ex. 2029 ¶¶ 28–33.

Patent Owner does not specify any acclaim or recognition in its Patent Owner Response to the ’956 patent family, let alone a challenged claim in the ’956 patent. *See* PO Resp. 59. Considering just the ’956 patent, it includes 29 claims, 294 columns, and includes much background information. *See* Ex. 1003. Patent Owner’s argument fails to show how its alleged evidence of value or praise which includes the whole ’956 patent family, distinguishes over many citations to, and great reviews of, popular text books or journal articles. *See* Ex. 2029 ¶¶ 28–32.

Patent Owner has not established a sufficient nexus between the merits of the claimed invention of the challenged claim in the ’956 patent and the alleged industry praise. Accordingly, Patent Owner’s evidence of secondary considerations based on industry praise is entitled to little or no weight.

3. Summary

Patent Owner failed to demonstrate a sufficient nexus between the claimed invention and any commercial success or industry praise. After considering all the cited evidence and arguments presented, the evidence of objective indicia of nonobviousness does not overcome Petitioner’s showing of obviousness.

III. MOTION TO AMEND

In an *inter partes* review, amended claims are not added to a patent as of right, but rather must be proposed as a part of a Motion to Amend. 35 U.S.C. § 316(d). As the moving party, Patent Owner bears the burden of proof in establishing that it is entitled to add proposed substitute claim 30. 37 C.F.R. § 42.20(c); *see also Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d at 1306–08 (patentee bears the burden of showing that its proposed substitute claims are patentable over the prior art of record); *Prolitec, Inc. v. ScentAir Techs., Inc.*, 807 F.3d 1353, 1363–64 (Fed. Cir. 2015) (same); *Idle Free Systems, Inc. v. Bergstrom, Inc.*, Case IPR2012-00027, slip op. at 7 (PTAB June 11, 2013) (Paper 26) (informative) ("For a patent owner's motion to amend, 37 C.F.R. § 42.20(c) places the burden on the patent owner to show a patentable distinction of each proposed substitute claim over the prior art."); *MasterImage 3D, Inc. v. RealD, Inc.*, Case IPR2015-00040 (PTAB July 15, 2015) (Paper 42) (same).

Patent Owner filed a contingent Motion to Amend in order to replace the claim 6 with proposed substitute claim 30 should claim 6 be determined to be unpatentable. Paper 21 ("Mot."). Petitioner opposes Patent Owner's Motion. Paper 31 ("Opp."). Because we find claim 6 unpatentable, we address Patent Owner's Motion to Amend. As discussed below, we determine that Patent Owner has not carried its burden of demonstrating the patentability of the proposed claim.

A. Analysis of the 37 C.F.R. § 42.121 Requirements

Patent Owner must demonstrate (1) the amendment responds to a ground of unpatentability involved in the trial; (2) the amendment does not

seek to enlarge the scope of the claims of the patent or introduce new subject matter; (3) the amendment proposes a reasonable number of substitute claims; and (4) the proposed claims are supported in the original disclosure. 37 C.F.R. § 42.121.

Proposed substitute independent claim 30 is reproduced below, with underlined text indicating material inserted relative to claim 6:

> 30. (Substitute for claim 6, if found unpatentable) A method of signal processing in a network to communicate at least some of a recommendation or solution to a plurality of subscribers, said method comprising the steps of:
>
> transmitting a signal to at least one of a plurality of stations;
>
> controlling a transmitter station on the basis of information communicated with said signal, said step of controlling said transmitter station comprising the steps of:
>
> selecting some generally applicable information in respect of a problem or interest;
>
> generating at least a portion of <u>an executable computer program</u> module including said selected generally applicable information; and
>
> transmitting said <u>executable computer program</u> module with at least a portion of said signal;
>
> controlling each of a plurality of receiver stations on the basis of information communicated with said signal, said step of controlling each of said plurality of receiver stations comprising the steps of:
>
> selecting some portion of said <u>executable computer program</u> module;
>
> <u>executing said executable computer program module at said receiver stations</u>;
>
> communicating receiver specific information to an output device; and
>
> recommending in outputted video, audio, or print subscriber specific action <u>comprising a recommendation to a</u>

> consumer to acquire a specific product or service in respect to said problem or interest; and
>
> controlling at least one of said plurality of receiver stations on the basis of information communicated with said signal, said step of controlling said at least one receiver station comprising the steps of:
>
> inputting to a processor some data communicated with at least one of said signal and said executable computer program module;
>
> causing said at least one receiver station to establish communications with a remote station; and
>
> communicating input to said remote station.

Mot. 28–29.

We determine Patent Owner has satisfied the burden with respect to the above-discussed requirements of 37 C.F.R. § 42.121. For example, Patent Owner seeks to add one substitute claim to replace the one claim found unpatentable, and the substitute claim adds limitations that purport to narrow the scope of the original claim it replaces. Mot. 1. Patent Owner identifies support in the original specification for the recitation in claim 30 of an "executable computer program module." *Id.* at 3 (citing Ex. 2021, 536:11–17, 538:12–16). Furthermore, Patent Owner identifies support in the original specification for the recitation in claim 30 of a "subscriber specific action comprising a recommendation to a consumer to acquire a specific product or service," including the disclosure that a subscriber is presented with a personalized recommendation to purchase a new truck. *Id*. at 5 (citing Ex. 2021, 551:15–552:7).

We, thus, are persuaded that there is written description support for Patent Owner's proposed substitute claim. Accordingly, we now focus on

whether Patent Owner has met its burden of proof to show that proposed substitute claim 30 encompasses patentable subject matter under 35 U.S.C. § 101.

B. Analysis of the Patentable Subject Matter

An *inter partes* review cannot be instituted using 35 U.S.C. § 101 as the basis for a challenge brought by a petitioner. *See* 35 U.S.C. § 311(b) ("A petitioner in an *inter partes* review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications."). In a motion to amend, however, the patent owner has the burden of demonstrating the patentability of the claims. *See* 37 C.F.R. § 42.20(c) ("The moving party has the burden of proof to establish that it is entitled to the relief requested."). In a case such as this, where the original claims have been determined to be invalid under 35 U.S.C. § 101 by a District Court (*see* Memorandum Opinion, Ex. 1022, 16–18), we will consider whether Patent Owner has explained how the proposed amendments addressed the District Court's concerns regarding the validity of the claims and whether Patent Owner has shown that its proposed amended claim encompasses patent eligible subject matter. *See Ariosa Diagnostics v. Isis Innovation Ltd.*, IPR2012-00022, Paper 166, slip op. at 51–52, 2014 WL 4381564, at *29–*30 (PTAB Sept. 2, 2014).

We begin our analysis with the principles of law that generally apply to a ground based on § 101, and then we turn to the arguments presented by the parties.

1. Principles of Law

A patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has held that this statutory provision contains an important implicit exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) ("Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."). Notwithstanding that a law of nature or an abstract idea, by itself, is not patentable, the practical application of these concepts may be deserving of patent protection. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293–94 (2012).

In *Alice*, the Supreme Court reaffirmed the framework set forth previously in *Mayo* "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Id.* (quoting *Mayo*, 132 S. Ct. at 1297–98). In other words, the second step is to "search for an

'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (quoting *Mayo*, 132 S. Ct. at 1294) (brackets in original). The prohibition against patenting an abstract idea "cannot be circumvented by attempting to limit the use of the formula to a particular technological environment or adding insignificant postsolution activity." *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (citation and internal quotation marks omitted).

Accordingly, using this framework, we analyze Patent Owner's proposed substitute claim 30.

2. Whether Proposed Substitute Claim 30 is Directed to an Abstract Idea

In the first step of our analysis, we determine whether the challenged claims are directed to a patent-ineligible concept, such as an abstract idea. *See Alice*, 134 S. Ct. at 2355. Petitioner contends that proposed substitute claim 30 is directed to the abstract idea of generating personalized recommendations for acquiring a product or service. Opp. 11 (citing August 10, 2015 Memorandum Opinion of the District Court for the District of Delaware ("Delaware District Court Opinion"), Ex. 1022, 18). In the Delaware District Court Opinion, original claim 6 was found to be directed to unpatentable subject matter, namely the abstract idea of providing personalized recommendations. *Id.* at 17–18 ("Claim 6 of the '956 patent is clearly abstract."). Specifically, the District Court found that the "claim is no different than the Department of Agriculture providing advice on what farmers should grow." Delaware District Court Opinion at 17. In response to Patent Owner's argument that the claim is not abstract because the

recommendations are generated simultaneously to multiple users, the District Court concluded this was a mere consequence of performing the method on a computer and the "improved speed or efficiency inherent with applying an abstract idea on a computer." *Id*. at 17–18. Petitioner notes that the District Court, in performing an analysis for patent eligibility, adopted the Patent Owner's proposed construction of "module" as a "program module." Opp. 10 (citing Ex. 1025 ("[A] module is 'any of a number of distinct but interrelated units from which a program may be built up.'")). Petitioner argues that Patent Owner's amendments simply recite program modules rather than modules generally and customer recommendations rather than recommendations generally, and Petitioner argues that neither of these changes affect the outcome of the *Alice* inquiry. *Id*. at 11. Petitioner, therefore, argues that the District Court's analysis also applies to proposed substitute claim 30. *Id*.

In response, Patent Owner relies upon the United States Court of Appeals for the Federal Circuit's decision in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), to support its position that the challenged claims are not directed to an abstract idea. PO Reply 5. According to Patent Owner, proposed substitute claim 30 is directed to a problem rooted in computerized networks where a signal from an origination station controls a transmitter station to select information and complete an executable computer program, which is then transmitted to receiver stations to be executed to provide recommendations of user-specific action. *Id.* at 5 (citing Ex. 2049 ¶¶ 96–103).

In *DDR Holdings*, the Federal Circuit determined that, although, the patent claims at issue there involved conventional computers and the Internet, the claims addressed the problem of retaining website visitors who, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be transported instantly away from a host's website after "clicking" on an advertisement and activating a hyperlink. *DDR Holdings*, 773 F.3d at 1257. The Federal Circuit held that "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id*.

Patent Owner's Declarant, Dr. Weaver, contends that the District Court overly simplified claim 6 to create its proposed abstract idea. Ex. 2049 ¶ 100. Furthermore, Patent Owner argues that claim 6 recites many specific steps involving specific hardware components. PO Reply 6 (citing Ex. 2049 ¶¶ 96–101).

Based on our independent assessment of the proposed claims, we do not agree with Patent Owner that the steps recited in proposed substitute claim 30 are "necessarily rooted in computer technology" and "specifically aris[e] in the realm of computer networks." *See DDR Holdings*, 773 F.3d at 1257. Rather, we agree that the subject matter of the challenged claims as framed by Petitioner—namely, "generating personalized recommendations for acquiring a product or service"—is not different fundamentally from the kinds of commonplace commercial methods and processes that were the subjects of recent decisions from the United States Supreme Court, as discussed below.

The Supreme Court held that the claims in *Alice* were drawn to the abstract idea of intermediated settlement and that "the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice*, 134 S. Ct. at 2352, 2358. *Alice* involved "a method of exchanging financial obligations between two parties using a third-party intermediary to mitigate settlement risk." *Id.* at 2356. Like the method of hedging risk in *Bilski*, 561 U.S. at 628, which the Supreme Court deemed "a method of organizing human activity," Alice's "concept of intermediated settlement" was held to be "a fundamental economic practice long prevalent in our system of commerce." *Alice*, 134 S. Ct. at 2356. Similarly, the Supreme Court found that "[t]he use of a third-party intermediary . . . is also a building block of the modern economy." *Id.* Thus, the Supreme Court held that "intermediated settlement . . . is an 'abstract idea' beyond the scope of § 101." *Id.* With respect to the first step of the patent-eligible analysis under the *Mayo* framework, the Supreme Court concluded that in *Alice* "there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement" in *Alice*, and that "[b]oth are squarely within the realm of 'abstract ideas' as we have used that term." *Alice*, 134 S. Ct. at 2357. On this record, we determine that, similar to the concept of intermediated settlement in *Alice* and the concept of risk hedging in *Bilski*, the concept at issue here—namely, "generating personalized recommendations for acquiring a product or service"—is a "practice long prevalent in our system of commerce," and "squarely within the realm of 'abstract ideas.'" *Alice*, 134 S. Ct. at 2356–57; *Bilski*, 561 U.S. at 611.

In the present case, "generating personalized recommendations for acquiring a product or service," such as presenting a personalized recommendation for a truck, as relied upon by Patent Owner for written description support (*see* Mot. 5 (citing Ex. 2021, 551:15–552:7)), is similar to commercial practices long found in commerce and advertising. Furthermore, as identified by Petitioner, Patent Owner admitted that computer program modules, the primary addition by amendment to original claim 6, were conventional years before the '956 patent. Opp. 11 (citing PO Resp. 13 (citing Exs. 2003, 2004, 2005)). As support for proposed substitute claim 30 in the original disclosure (Mot. 5), Patent Owner relies upon the following disclosure:

> For example, by analyzing equipment depreciation information, one microcomputer, 205, *determines that its farmer has an old truck*, a new tractor, and a new disk harrow *and selects*, as one of its four commercials, *the commercial for the new truck*.

Ex. 2021, 551:30–34 (emphasis added). Therefore, in the example above set forth in the specification of the '956 patent, the microcomputer determines the farmer has an old truck and provides that farmer with advertising for a new truck. *See id*. Patent Owner does not contend that they are the first to target a person with an old truck with a commercial for a new truck. Much like a farmer more than 100 years ago riding into town on an old wagon may have received an advertisement for a new wagon, the practice of providing personalized recommendations or advertising based on the current possessions of a potential customer is a practice "long prevalent in our system of commerce." *Alice*, 134 S. Ct. at 2356. Accordingly, similar to the District Court, we determine that "generating personalized recommendations

for acquiring a product or service," is an abstract idea. Therefore, in view of the foregoing, we are persuaded that proposed substitute claim 30 is directed to an abstract idea.

3. Whether the Proposed Substitute Claim Includes Limitations That Represent Inventive Concepts

Turning to the second step in the analysis, we look for additional elements that can "transform the nature of the claim" into a patent-eligible application of an abstract idea. That is, we determine whether the claims include an "inventive concept," i.e., an element or combination of elements sufficient to ensure that the patent in practice amounts to significantly more than a patent on the abstract idea itself. *Alice*, 134 S. Ct. at 2357. The relevant inquiry here is whether "additional substantive limitations . . . narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not cover the full abstract idea itself." *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1344–45 (Fed. Cir. 2013) (internal quotations and citation omitted). The Supreme Court in *Alice* cautioned that merely limiting the use of abstract idea "to a particular technological environment," or implementing the abstract idea on a "wholly generic computer," is not sufficient." *Alice*, 134 S. Ct. at 2358 (citation and internal quotation marks omitted).

In other words, the limitations of the claims must be examined to determine whether the claims contain an "inventive concept" to "transform" the claimed abstract idea into patent-eligible subject matter. *Alice*, 134 S. Ct. at 2357. "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Alice*, 134 S. Ct. at 2357

(quoting *Mayo*, 132 S. Ct. at 1297) (alterations in original). Those "additional features" must be more than "well-understood, routine, conventional activity." *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (internal quotation marks omitted) (citing *Mayo*, 132 S. Ct. at 1298).

Petitioner contends that proposed substitute claim 30 fails to recite any meaningful limitations on the abstract idea. Opp. 11–12. Petitioner specifically argues that the limitations added to proposed substitute claim 30 narrow the claim from modules generally to program modules, but adding generic computer components and functionality cannot supply an inventive concept. Opp. 11 (citing *Alice*, 134 S. Ct. at 2359–60).

Patent Owner contests Petitioner's arguments that the challenged claims lack meaningful limitations that confine the claims to patentable subject matter. PO Reply 6–7. Patent Owner argues that claim 30 is closely tied to computer hardware and software and directed to a "concrete application of 'personalized recommendations.'" *Id.* at 7 (citing Ex. 2049 ¶¶ 102–103; Ex. 2048 ¶¶ 10–13).

As in *Alice*, the relevant question is "whether the claims here do more than simply instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer." *Alice Corp.*, 134 S.Ct. at 2359. We conclude that they do not. More particularly, we are not persuaded that what Patent Owner argues is a "concrete application of 'personalized recommendations'" provided in the amendments presented in substitute claim 30 incorporate enough meaningful limitations to ensure that it claims more than just an abstract idea. *See Alice Corp.*, 134 S.Ct. at 2357

(quoting *Mayo*, 132 S. Ct. at 1297). The computer hardware elements recited in method claim 30, including the inclusion of an "executable computer program module," amount to "a mere instruction to 'implemen[t]' an abstract idea 'on . . . a computer.'" *Id*. at 2358 (internal citation omitted). More particularly, we conclude that when considered individually and "as an ordered combination," the claim elements, including the "executable computer program module," appear to recite steps to perform the abstract concept of "generating personalized recommendations for acquiring a product or service" on a computer, which is not sufficient to transform an abstract idea into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2359–60 (citing *Mayo*, 132 S. Ct. at 1297–98). Therefore, we find that Patent Owner has not demonstrated the patentability of proposed substitute claim 30. Accordingly, Patent Owner's Motion to Amend is *denied*.

C. Analysis of the Patentable Distinction of the Proposed Claim Over the Prior Art

We have determined that Patent Owner has not demonstrated the patentability of proposed substitute claim 30 under 35 U.S.C. § 101. Accordingly, we need not reach a decision regarding whether proposed substitute claim 30 is patentable in view of the prior art.

IV. CONCLUSION

For the foregoing reasons, we conclude Petitioner has shown by a preponderance of the evidence that claim 6 of the '956 patent would have been obvious under 35 U.S.C. § 103 in view of Higgins and Metcalfe and Petitioner has shown by a preponderance of the evidence that claim 6 of the

’956 patent would have been obvious under 35 U.S.C. § 103 in view of Furukawa.

In addition, we conclude Patent Owner has not met its burden to show proposed substitute claim 30 is patentable.

V. ORDER

For the reasons given, it is

ORDERED that, based on Petitioner’s showing by a preponderance of the evidence, claim 6 of the ’956 patent is unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend is *denied*; and

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

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