

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMAZON.COM, INC.,
Petitioner,

v.

M2M SOLUTIONS LLC,
Patent Owner.

Case IPR2017-01893
Patent 8,577,359 B2

Before KARL D. EASTHOM, DAVID C. McKONE,
and STACY B. MARGOLIES, *Administrative Patent Judges*.

McKONE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Amazon.com, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1–30 of U.S. Patent No. 8,577,359 B2 (Ex. 1003, “the ’359 patent”). M2M Solutions LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314, in our Institution Decision (Paper 8, “Dec.”), we instituted this proceeding as to claims 1–30.

Patent Owner filed a Patent Owner’s Response (Paper 19, “PO Resp.”), Petitioner filed a Reply to the Patent Owner’s Response (Paper 22, “Reply”), and Patent Owner filed a Sur-Reply (Paper 26, “Sur-Reply”).

Petitioner relies on the Declaration of George Kesidis, Ph.D. (Ex. 1009, “Kesidis Decl.”). Patent Owner relies on the Declaration of Brian A. Berg (Ex. 2001, “Berg Decl.”) and the Declaration of Majid Sarrafzadeh, Ph.D. (Ex. 2009, “Sarrafzadeh Decl.”).

We held an oral argument on the morning of November 6, 2018, in this proceeding and related proceedings IPR2017-01891 and IPR2017-01892. Paper 30 (“Tr.”). Further, we held an oral argument later that afternoon in IPR2017-01895 and IPR2017-01896. Paper 31 (“’1895 Tr.”). As previously agreed to by the parties, in light of the potential for subject matter overlap between the two oral arguments, we entered both transcripts into the records of all five related proceedings. Tr. 3:7–12; ’1895 Tr. 3:6–11.

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–

30. Based on the record before us, we determine Petitioner has proved, by a preponderance of the evidence, that claims 1–30 are unpatentable.

B. Related Matters

The parties indicate that the '359 patent has been asserted in *M2M Solutions LLC v. Amazon.com, Inc.*, Case No. 1:17-cv-00202-LPS-CJB (D. Del.) (“the '202 litigation”). Pet. 1; Paper 4, 1. The '359 patent also is the subject of IPR2017-01896. Pet. 1–2. Patents related to the '359 patent are the subjects of the following *inter partes* reviews: IPR2017-01891, IPR2017-01892, IPR2017-01894, and IPR2017-01895. Pet. 1–2; Paper 4, 1–2.

C. Evidence Relied Upon

Petitioner relies on the following prior art:

Ex. 1011 (“Loughran”)	US 2002/0129107 A1	pub. Sept. 12, 2002 (filed Mar. 12, 2001)
Ex. 1012 (“Chow”)	US 2002/0191557 A1	pub. Dec. 19, 2002 (filed June 14, 2001)
Ex. 1015 (“Kloba”)	US 6,421,717 B1	iss. July 16, 2002 (filed Apr. 28, 2000)
Ex. 1016 (“Multer”)	US 6,671,757 B1	iss. Dec. 30, 2003 (file Jan. 26, 2000)
Ex. 1017 (“Fong”)	US 7,197,011 B2	iss. Mar. 27, 2007 (filed Aug. 6, 2001)

D. The Asserted Grounds

We instituted on the following grounds of unpatentability (Dec. 40):

References	Basis	Claim(s) Challenged
Kloba and Multer	§ 103(a)	1, 2, 5, 6, 8–11, 13, and 14
Kloba, Multer, and Loughran	§ 103(a)	3, 7, 12, 16–18, 20, and 22–30
Kloba, Multer, Loughran, and Chow	§ 103(a)	19 and 21
Kloba, Multer, and Chow	§ 103(a)	4
Kloba, Multer, and Fong	§ 103(a)	15

E. The '359 Patent

The '359 patent is directed to “[a] system for autonomously monitoring and managing consumer device assets.” Ex. 1003, Abstract. Figure 2, reproduced below, illustrates an example:

FIG. 2

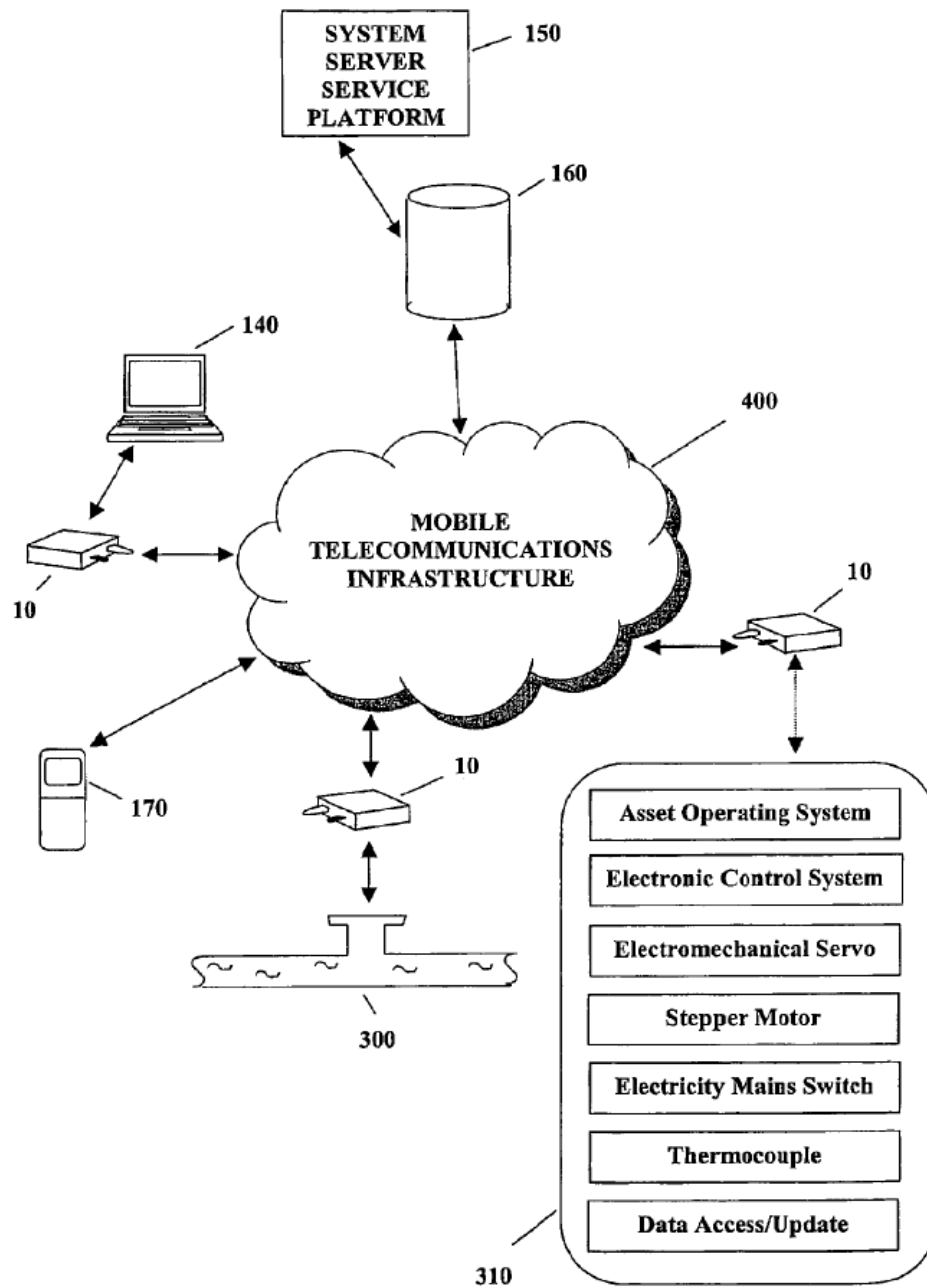


Figure 2 is a diagram of applications controlled by wireless modules 10. Ex. 1003, 12:61–64. Wireless modules 10 communicate via mobile telecommunications infrastructure 400. *Id.* at 15:26–28. Mobile phone or message-enabled wireless terminal 170 communicates with a specific

wireless module or with system server service platform 150 via point of interconnection 160 of mobile telecommunications infrastructure 400. *Id.* at 15:29–33.

In some examples, “[t]he wireless module (10) is capable of controlling many system operation variables of the associated asset such as an asset operating system, an electronic control system, an electromechanical servo, a stepper motor, an electricity mains switch, a thermocouple and a means to access or update data (310).” *Id.* at 15:37–42. In another example, “[t]he wireless module has the capability to be integrated with a utilities meter such as a water flow meter (300) wherein water usage data can be remotely accessed from the wireless module integrated with the utility meter and forwarded to the water board.” *Id.* at 15:43–47. Other examples follow:

the remote programming of consumer devices such as solid state video recorders and other household equipment including heating systems and the like wherein the remote server may monitor the scheduling of preferred television broadcasts according to stored user preferences and forward messages of upcoming programmes to the user and organise the programming of a home video recorder in response to receiving messages back from the user,
id. at 10:28–35;

a mobile phone or similar PDA device such as for the activation or change of highway traffic speed indicators, wherein the wireless module receives data from authorised personnel or systems to change the display of the speed indicator to suit changing driving conditions due to an accident or change in weather,
id. at 10:41–47; and

an improved remote asset management system, which gathers data according to the use of a particular asset and forwards this data to a remote server for the purpose of optimising the asset and for designing an appropriate range of services to support the said use of the asset wherein the wireless module may comprise a display having a range of options such as pull down menus for internet or dedicated service access and wherein these might be improved if the range of options were prioritised automatically according to the way the user preferred to use the device or in the order of access of mostly used features,

id. at 11:4–15.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A remote computer server platform for providing a range of consumer services by autonomously monitoring and managing a plurality of consumer device assets wirelessly connected to one or more communications networks, each asset having operating system and application software, nonvolatile memory for storing files of data content for display to a consumer user of the device, and a display apparatus for displaying the stored data content, said remote computer server platform comprising:

data storage for storing registration information pertaining to each of the plurality of consumer device assets;

one or more receivers configured to receive communications sent, over the one or more communications networks, from the plurality of consumer device assets containing operational status information and consumer usage information, said communications having automatically resulted from at least one selected from the group consisting of preprogrammed conditions and programming instructions generated by the remote computer server platform;

one or more processors configured to automatically process the received operational status information and the received consumer usage information according to preprogrammed conditions, the remote computer server platform thereby monitoring the plurality of consumer device assets;

one or more transmitters configured to send communications, over the one or more communications networks, containing management instructions that cause the stored data content files of one or more assets to be automatically modified based upon the results of having processed at least some of the received consumer usage information, the remote computer server platform thereby managing the plurality of consumer device assets; and

wherein the communications received by and sent from the remote computer server platform are transmitted over the one or more communications networks and comprise at least one selected from the group consisting of General Packet Radio Service (GPRS) data messages, Enhanced Data rates for GSM Evolution (EDGE) data messages, and other packet switched data messages.

II. ANALYSIS

A. *Claim Construction*

For petitions filed before November 13, 2018, we interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b)

(2017)¹; *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016). In applying a broadest reasonable construction, we generally give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. See *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. *Constructions of “consumer device assets,” “operational status information,” and “management instructions”*

The two independent claims, claims 1 and 20, each recite “consumer device assets.” In our institution decision, we declined to construe “consumer device asset” expressly, as doing so was not necessary to resolve the parties’ dispute. Dec. 9; *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”). Petitioner contended that a consumer device asset should be construed to mean “any fixed or mobile electronic device,” and could include personal and home security devices, home entertainment systems, utility meters, laptop computers, and cellular phones. Pet. 7. Patent Owner argued that Petitioner’s construction both was too broad and too narrow: too narrow in that it was limited to “fixed or mobile” and “electronic” devices and too broad in that it did not recite “consumer” devices. Prelim. Resp. 8–9. The prior art asserted in this proceeding includes personal digital assistants and cellular phones, which the parties do not dispute are portable,

¹ See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (to be codified at 37 C.F.R. pt. 42).

electronic, and consumer devices, and, thus, meet a construction of consumer device asset under both parties' narrowing language. Thus, we need not construe the term further to resolve the parties' disputes.

We acknowledged a dispute between the parties as to whether “operational status information” means “data relating to the performance or functionality of a device asset,” as Petitioner asserted (Pet. 9), or whether the specification “more generically and interchangeably refers to the ‘operational status’ of a consumer device asset as its operational ‘condition,’” as Patent Owner asserted (Prelim. Resp. 15–18). Dec. 9–10. Nevertheless, we did not need to resolve the parties' dispute because we applied the prior art under Petitioner's more narrow proposal. *Id.* at 10.

Similarly, we acknowledged a dispute between the parties as to whether “management instructions” means “commands for a device asset to perform particular actions,” as asserted by Petitioner (Pet. 11), which Patent Owner contended was too narrow (Prelim. Resp. 19–20). Dec. 11. Nevertheless, we did not need to resolve the parties dispute because we applied the prior art under Petitioner's more narrow proposal. *Id.* at 11–12.

The parties do not further challenge these claim constructions in this proceeding. PO Resp. 1. We need not further construe these terms to resolve the controversy presented in this proceeding because, as explained below, Petitioner establishes unpatentability under its more narrow proposals. *See Vivid Techs.*, 200 F.3d at 803.

2. Preamble

Claim 1 recites—in its preamble—“[a] remote computer server platform for providing a range of consumer services by autonomously

monitoring and managing a plurality of consumer device assets . . . , each asset having . . . *nonvolatile memory* for storing files of data content for display to a consumer user of the device.”² The preamble of claim 20 includes a similar recitation. We determine that “nonvolatile memory,” recited in the preamble, is not a limitation of claims 1 and 20. In the Decision on Institution, we determined that Petitioner had shown a reasonable likelihood of prevailing even if the preamble is a limitation. Dec. 8. Accordingly, we found it unnecessary to address the dispute at that time. *Id.* Nevertheless, both parties brief the issue whether “nonvolatile memory,” in the preamble, is a limitation and we address it here.

Generally, the preamble does not limit the claims. *See Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1236 (Fed. Cir. 2017).

However, a preamble may be limiting if

“it recites essential structure or steps”; claims “depend[] on a particular disputed preamble phrase for antecedent basis”; the

² There are other aspects of the preamble Patent Owner contends are limitations. PO Resp. 3–4. Nevertheless, whether or not the prior art teaches “nonvolatile memory” (should it be construed as a limitation) is the only issue in controversy in this proceeding that implicates the preambles of claims 1 and 20. Patent Owner does not dispute that the remaining structures in the preambles (e.g., “operating system and application software” and “a display apparatus for displaying the stored data content”) are taught by the prior art (Kloba, specifically, as detailed below). Thus, in this proceeding, we only address whether “nonvolatile memory” is a limitation of claims 1 and 20. We note that the Federal Circuit has not required the entire preamble to be limiting when only a portion of the preamble recites essential structure. *See TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1323 (Fed. Cir. 2015) (“That the phrase in the preamble ‘destination tracking system of at least one mobile unit’ provides a necessary structure for claim 1 does not necessarily convert the entire preamble into a limitation, particularly one that only states the intended use of the invention.”).

preamble “is essential to understand the limitations or terms in the claim body”; the preamble “recit[es] additional structure or steps underscored as important by the specification”; or there was “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art.”

Id. (quoting *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (citations omitted)). None of these considerations are present here.

Patent Owner contends that the recitation of nonvolatile memory in the preamble of claim 1 provides antecedent basis for “the stored data content files” recited later in the body of claim 1. PO Resp. 5. Petitioner responds that “[w]hat is important for the ’359 patent, however, is merely that the consumer devices store display data—not what *type* of memory is used for storage. Deleting ‘nonvolatile’ would have no effect on the body of the claims.” Reply 3.

We agree with Petitioner. The body of claim 1, for example, does not refer back to “nonvolatile memory for storing files of data content for display.” The claim affirmatively refers to “the stored data content files,” but does not refer to or rely on the memory used to store the files. Nor does the claim recite storing the files in a particular memory. Nonvolatile memory is not essential structure for any of the recited structure or essential to understanding the limitations or terms in the claim body. The claim recites receiving information from the assets, processing the information, and sending instructions that cause the stored data content files to be modified. Nonvolatile memory is not essential for performing any of these functions. Nor is the type of memory that stores the files essential for performing the general function of modifying the files.

The specification of the '359 patent does not characterize nonvolatile memory as being significant or important. Patent Owner argues that the specification “discloses the importance of storing and updating data on the consumer device assets,” and, to that end, “discloses that wireless module 10, which is associated with a specific consumer device asset and can be integrated with that specific consumer device asset, comprises a memory module (70) for non-volatile storage of data.” PO Resp. 8–9 (citing Ex. 1003, 7:45–53, 11:60–63, 13:16–19, 13:36–41, 14:33–39, 17:14–31, 18:58–61, 21:65–22:10, 22:27–37). Petitioner contends that Patent Owner “points to nothing in the specification to indicate that ‘nonvolatile’ memory is important to the claimed techniques,” and that “[t]he word ‘nonvolatile’ does not even appear in the specification.” Reply 4. We have reviewed each of the passages to which Patent Owner cites and find no reference to nonvolatile memory, and, accordingly, no discussion of the importance of nonvolatile memory.

The '359 patent does not describe the type of memory that stores data content files in the asset, let alone state that the memory may, should, or must be nonvolatile memory. Figure 1 of the '359 patent illustrates wireless module 10, which may be integrated with an asset, as including a memory module 70. Ex. 1003, 13:16–20. The '359 patent states that subscriber data and GPS data are stored in memory module 70, but does not provide any details regarding the structure or type of memory that the memory module is or should be. *Id.* at 13:36–39, 14:33–37 (stating that GPS data is stored “periodically according to a certain period” and that “[t]he data is stored in the memory module (70) for the purpose of creating a tracking log of the movement of the device”).

The '359 patent also generally states that “the wireless module has the capability to receive and store data for the purpose of updating data stored in the memory of an associated asset.” *Id.* at 19:34–36. The patent uses the example of a GPS vehicle guidance system in which, “[i]n order for the system to be useful, the map data must be up to date,” but again does not specify whether the memory is volatile or non-volatile. *Id.* at 19:43–44; *see also id.* at 20:51–55 (describing updating the in-vehicle GPS navigation system “with map data and localised real-time data relating to traffic congestion events”).

In the background and summary of the invention sections, the '359 patent similarly does not describe the type of memory for storing files of consumer device assets. For example, the '359 patent discloses that “there exists a need for a system and method to update the stored data on satellite navigation vehicle guidance systems.” *Id.* at 3:38–40. The '359 patent notes that existing systems “do not have the facility for the road data to be updated as road systems change” and that “mak[ing] possible the updating of the data in an efficient way . . . would greatly improve the usability of such systems.” *Id.* at 3:40–44. The patent does not describe how the navigation data is stored or the memory used for storing. *See id.* at 3:38–44.

The '359 patent also states that one object of the invention is to provide an improved remote asset management system in which a GPS module “is capable of periodically determining a GPS position fix and storing this data according to a programmable period such that a remote server can request one or more of the stored data and the times when the data were stored.” *Id.* at 7:46–53. The '359 patent does not identify any particular memory for storing the GPS position fix data, and does not

describe the importance of using a particular memory such as nonvolatile memory. *See id.* The '359 patent states that another object of the invention is “to complement vehicle GPS systems by making possible the receipt and storage of up-to-date route data” because “[o]ver time, the stored GPS data becomes outdated as changes are made to the road network.” *Id.* at 8:1–8. The patent adds that the system can organize and “transmit navigational map data to complement or modify the GPS data stored in the vehicle system.” *Id.* at 8:8–15; *see also id.* at 9:1–8 (referring to a laptop computer with a GPS chipset and “previously stored geographical coordinates”). Again, the patent does not identify the type of memory for storing the GPS data. *See id.* at 8:1–15, 9:1–8.

In sum, the specification does not identify nonvolatile memory or describe it as important to the invention. Neither party identifies or argues a clear reliance on nonvolatile memory in the preamble during prosecution to distinguish the claimed invention from the prior art, and we find none.

Finally, Patent Owner argues that Petitioner admitted to the District Court in the '202 litigation that the preambles of claims 1 and 20 are limiting. PO Resp. 10. Specifically, in advancing a motion to dismiss for failure to recite statutory subject matter under 35 U.S.C. § 101, Petitioner argued to the District Court that “[t]he claims generically provide that these consumer devices and server include an operating system, application software, memory, and, for the devices, a display ('358 patent³) at claims 1, 20)—standard components that are present in all computers.” Ex. 2020, 14.

³ U.S. Patent No. 8,577,358, challenged in IPR2017-01892 and IPR2017-01895.

In arguing the motion to the court, Petitioner further stated that the “[i]ndependent claims are directed largely to software, but they do include some structural limitations. They recite a server, they recite a plurality of consumer device assets and they recite a communications network that the server and device assets are connected through. . . . The claims say that these have operating systems, applications, memory, a display, so these would include any consumer devices with a display.” Ex. 2021, 10:22–11:16. We do not find in these statements a clear admission that nonvolatile memory is a limitation of claims 1 and 20. In any case, the claim language and the description in the specification do not support a conclusion that nonvolatile memory is a limitation.

In sum, because “nonvolatile memory,” as recited in the preambles of claims 1 and 20, is not essential structure, is not essential to understanding the limitations or terms of the claims, is not described in the specification as important, and was not relied on to distinguish the claimed invention from the prior art, it is not limiting.

3. “*consumer usage information*”

The parties dispute the construction of “consumer usage information,” which appears in both of the independent claims. Petitioner contends that the term means “data relating to an individual’s interactions with a device asset or related devices.” Pet. 10. In the Preliminary Response, Patent Owner argued that Petitioner’s addition of “or related devices” improperly broadens the scope of the claims, that Petitioner improperly substitutes “individual” for “consumer,” and that Petitioner improperly substitutes “interactions” for “usage.” Prelim. Resp. 10–15. Patent Owner proposed

construing “consumer usage information” to mean “information identifying the manner in which a consumer has used a consumer device asset.” *Id.* at 15. In the Institution Decision, we determined that Petitioner made a threshold showing of obviousness even under Patent Owner’s narrower construction of “consumer usage information,” and, accordingly, declined to construe this term more broadly than Patent Owner’s proposal. Dec. 11; *Vivid Techs.*, 200 F.3d at 803.

In the Patent Owner Response, Patent Owner urges yet a narrower construction, namely, “information that identifies the *particular* manner in which a consumer has used a consumer device asset.” PO Resp. 55 (emphasis added). In support, Patent Owner (*id.* at 54) quotes the following passage from the specification of the ’359 patent:

In a further area of application, consumers would benefit from a system, which gathered data according to the use of a particular asset and forwarded this data to a remote server for the purpose of optimizing the asset and for designing an appropriate range of services to support the said use of the asset. For example, any communication device which comprised a range of options such as pull down menus for internet or dedicated service access might be improved if the range of options were prioritized automatically according to the way the user preferred to use the device or in the order of access of mostly used features.

Ex. 1003, 3:66–4:9. *See also id.* at 11:4–15 (reproduced above). By its terms, the example to which Patent Owner cites describes gathering data “according to the use of a particular asset,” not the *particular* use of that asset. *Id.* at 3:66–4:9.

Nevertheless, Patent Owner argues that, based on this passage, a skilled artisan

would understand that the asset is forwarding information to the remote server that indicates not merely that the consumer has somehow made use of the asset or one of its pull down menus, but rather information that further identifies for the server the particular manner in which the consumer has used the range of options presented by the pull down menu.

PO Resp. 54. Patent Owner argues that the server would not be able to optimize changes to the asset to automatically prioritize its pull-down menu options without receiving information that identifies the particular way in which the user used the pull-down menu. *Id.* at 54–55. Patent Owner further contends that, in this example,

a consumer device asset sends information to a remote server detailing the particular manner in which a consumer has used its pull down menu feature, which in turn enables the server to autonomously make automatic modifications to that asset which serve to optimize its pull down menu for the benefit of the consumer.

Sur-Reply 20.

The passage on which Patent Owner relies, however, does not support Patent Owner's narrow construction because it merely describes a desired result at a high level of generality and provides little detail as to how an asset would collect and use data on particular consumer usage. At most, this passage describes gathering data about the use of a pull-down menu of an asset, forwarding the data to a server, and automatically prioritizing the options in the pull-down menu according to the way the user preferred to use the asset.

Moreover, Petitioner argues that Patent Owner's construction improperly limits consumer usage information to a single embodiment among many described examples, including examples of transmitting

information about a consumer's use of gas, water, and electricity and a user's press of a call button.⁴ Reply 17–18 (citing Ex. 1003, 4:18–34, 4:32–38, 6:20–35, 11:24–35). For example, the '359 patent explains:

In a further area of application, *consumers* would benefit from a system, which would enable utility meters such as gas, water and electricity meters to be read remotely. If a device were integrated with the readout of the meter such that *usage data* could be communicated wirelessly, such a system would save the time and effort involved in reading the meter manually.

Ex. 1003, 4:18–24 (emphases added). We agree with Petitioner that these are additional examples of reading data related to a consumer's use of a device asset that should be considered in construing “consumer usage information.” For these examples, there is no description of consumer usage information that is limited to the *particular* manner in which the assets are used.

Patent Owner argues that Petitioner's examples are irrelevant because they are directed to systems that are “completely different from the claimed ‘consumer usage information’ invention.” Sur-Reply 21–22. In particular, Patent Owner argues that, in these examples, there is no consumer device asset that sends information to a remote server concerning how it has been used and no server that receives and processes such information as a basis for making automatic modifications to the consumer device asset. *Id.*

Nevertheless, there are many of the same deficiencies with the passages identified by Patent Owner. For instance, Patent Owner points to

⁴ Patent Owner complains that this is a new argument not raised in the Petition. Sur-Reply 20. However, Petitioner could not have been expected to contend that Patent Owner's proposed construction sought to read in a preferred embodiment until Patent Owner made that argument.

no description in its example (Ex. 1003, 3:66–4:9) of the pull-down menu data being used consistent with the other claimed aspects of consumer usage information, such as being communicated automatically as a result of a pre-programmed conditions or instructions, being processed by the server, or management instructions being communicated based on such processing.⁵ Thus, Patent Owner does not clearly show why its cited passage should be used to limit “consumer usage information” while Petitioner’s cited passages should be disregarded.

In any case, Petitioner’s example at column 4, lines 18–24, uses language that most closely tracks the language used in the claims, employing the terms “consumers” and “usage data.” Thus, despite Patent Owner’s arguments, we find no basis to exclude this example from the scope of the challenged claims. Rather, “consumer usage information” is broad enough to encompass Petitioner’s cited examples as well as Patent Owner’s.

Patent Owner also cites to a dictionary that it contends defines “usage” as the “manner . . . of using” and does not support the broader term, “interactions.” PO Resp. 55–56 (quoting Ex. 2003, 1509). According to Patent Owner’s dictionary, “usage” means “1a. The act, manner, or amount of using.” Ex. 2003, 1509. Thus, by its plain language, informed by Patent Owner’s chosen dictionary, “consumer usage information” includes information regarding the act of a consumer using an asset as well as

⁵ Patent Owner admitted that its example did not expressly describe management instructions and, instead, argued that a skilled artisan would have understood that the only way to get the prioritizing information from the server to the asset would be to send management instructions. Tr. 86:6–87:6.

information regarding the manner in which a consumer uses the asset. Reply 18–19. This dictionary definition, then, supports Petitioner’s construction, insofar as it pertains to data relating to a consumer’s interactions⁶ with a device asset.⁷ This definition does not support Patent Owner’s more narrow addition of “particular” to its construction.

Petitioner also argues that Dr. Sarrafzadeh’s testimony undermines Patent Owner’s proposed construction. Reply 18. Indeed, Dr. Sarrafzadeh proposes construing consumer usage information to refer to information that “identifies the manner in which a consumer has used a consumer device asset itself.” Ex. 2009 ¶ 33. This testimony, at most, supports the construction Patent Owner proposed in the Preliminary Response (and we applied in the Institution Decision), but does not support the new proposal in the Patent Owner Response.

In sum, the plain language of the claims, the specification, and Patent Owner’s extrinsic evidence show that “consumer usage information” is at least as broad as information relating to a consumer’s use of a device asset. In this proceeding, we need not resolve the parties’ additional disputes as to whether the term is broader, as Petitioner argues, to include information

⁶ Petitioner contends that “interactions” is not meaningfully different from “use.” Tr. 26:22–27:2. To the extent “use” is more narrow, we evaluate the prior art under the narrower understanding.

⁷ Petitioner’s proposed construction would include data relating to an “individual’s” interaction with a device asset “or related devices.” Pet. 10. However, the parties do not dispute that the asserted prior art device assets are consumer device assets. Dec. 9. Likewise, in this proceeding, Petitioner does not contend that the prior art shows user interaction with a related device. Tr. 26:3–6. Thus, we need not resolve these disputes in this proceeding.

about an individual's interactions, rather than a consumer's interactions, or interactions with related devices. We note also that, below, we analyze the claims under the construction Patent Owner proposed in the Preliminary Response, namely "information identifying the manner in which a consumer has used a consumer device asset," to the extent that this construction is more narrow than Petitioner's proposal. In any case, we do not further limit this term to information identifying the *particular* manner in which a consumer has used a consumer device asset, as Patent Owner proposes in the Patent Owner Response.

4. *"one or more transmitters configured to send communications, over the one or more communications networks, containing management instructions that cause the stored data content files of one or more assets to be automatically modified based upon the results of having processed at least some of the received consumer usage information, the remote computer server platform thereby managing the plurality of consumer device assets"*

Claim 1 recites

one or more transmitters configured to send communications, over the one or more communications networks, containing management instructions that cause the stored data content files of one or more assets to be automatically modified based upon the results of having processed at least some of the received consumer usage information, the remote computer server platform thereby managing the plurality of consumer device assets.

Claim 20 includes a similar recitation.

As discussed in more detail below, Petitioner contends that Kloba compiles and sends communications containing management instructions (instructions it contends command mobile devices to synchronize content

with outside providers), based on processing users' selection of channels and user-identified preferences. Pet. 33–34 (citing Ex. 1009 ¶¶ 234–235, 846). According to Petitioner, “[i]n order to load a device with user-selected channels, the server must necessarily compile and send instructions to the devices based on processing at least some of the user’s selection of those channels and user-identified preferences (‘consumer usage information’).” *Id.* Thus, Petitioner contends that the *sending of communications* containing management instructions is based on processing of consumer usage information. *See also* Tr. 44:13–18 (“But a more fundamental point, perhaps, is that these claims -- the claim language recites that these instructions are communicated based on the results of processing at least some of this received consumer usage information. It is the step of communicating that is performed based on processing the received information.”).

In response, Patent Owner argues that “the express claim language requires ‘management instructions’ that are ‘***based upon the results of processing at least some of the received consumer usage information.***’” PO Resp. 37. Thus, Patent Owner reads this term as requiring that the *management instructions themselves*, rather than the sending of communications containing those instructions, be based on processing the consumer usage information.

Claim 1 recites “one or more transmitters configured to send communications, over the one or more communications networks, containing management instructions that cause the stored data content files of one or more assets to be automatically modified,” and continues with “based upon the results of having processed at least some of the received

consumer usage information, the remote computer server platform thereby managing the plurality of consumer device assets.” Syntactically, “based upon the results of having processed at least some of the received consumer usage information” could be read to modify either “configured to send communications” or “management instructions that cause the stored data content files of one or more assets to be automatically modified.” It is not unreasonable to read the claim language itself as broad enough to encompass sending communications based upon the results of processing consumer usage information. Thus, the ordinary meaning of the claim term is broad enough to support both Petitioner’s view and Patent Owner’s view.

We look to the specification to ascertain whether it guides us toward a more narrow reading. Patent Owner argues that “in the overall context of the patent, it makes sense that those [management] instructions would be based upon processing at least some of the received consumer usage information.” Tr. 75:16–19. However, Patent Owner does not point us to any description in the specification that would redefine or limit this term to management instructions that are based on processing consumer usage information and exclude from the term sending communications based on such processing. In fact, the specification includes examples of communication of instructions based on processing data, consistent with Petitioner’s reading. *See, e.g.*, Ex. 1003, 4:27–31 (“[I]t would be beneficial if a mobile phone message could be received by a remote server and cause data instructions to be communicated to one or more wireless control modules which might lock doors remotely or disable the functionality of certain devices.”), 22:67–23:10. Patent Owner has not cited to any examples in the specification of management instructions that are based on processing

consumer usage information, let alone examples that would form a basis for excluding Petitioner's reading of claim 1. The examples to which Patent Owner points as exemplifying consumer usage information (PO Resp. 54 (citing Ex. 1003, 3:66–4:9, 11:4–15)), do not describe management instructions. Thus, the specification provides no reason to exclude Petitioner's interpretation from the ordinary meaning of this term.

Upon consideration of the plain language of the claim and the description in the specification, we conclude that the ordinary meaning of this limitation is broad enough to encompass the sending of communications, based upon the results of processing consumer usage information, containing management instructions.

B. Asserted Grounds of Unpatentability

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” We resolve the question of obviousness 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.⁸ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

⁸ The record does not include allegations or evidence of objective indicia of nonobviousness.

1. Level of Skill in the Art

Petitioner, relying on the testimony of Dr. Kesidis, contends that a person of ordinary skill in the art

would have had (a) a master's degree in electrical engineering, computer engineering, computer science or the equivalent, with coursework covering networked devices and servers, or (b) a bachelor's degree in one of those fields and at least two years of industry experience working with networked devices and servers; or (c) four years of industry experience working with networked devices and servers.

Pet. 16 (citing Ex. 1009 ¶ 54). Patent Owner does not take a position in the Response as to the level of skill. However, in the Preliminary Response, Patent Owner contended that a person of ordinary skill in the art

would have: (1) a bachelor's degree in computer engineering, electrical engineering, mathematics, computer science or a closely related field; and (2) a minimum of 2–3 years of industry experience with consumer electronics and related software and firmware, and networked electronic devices,
[or]

an individual with an advanced degree in a relevant field, such as computer or electrical engineering, would require less industry experience (*e.g.*, 1–2 years).

Prelim. Resp. 3–4 (citing Ex. 2001 ¶ 27).

In the Institution Decision, we did not ascertain a meaningful difference between the parties' competing proposals and we noted that the parties did not argue that any issue in the case turns on such a difference. Dec. 13. The parties still do not argue that any issue in the case turns on this difference. We maintain our finding that both proposals are essentially the same and that both reflect the level of ordinary skill in the art.

2. Alleged Obviousness of Claims 1, 2, 5, 6, 8–11, 13, and 14 over Kloba and Multer

Petitioner contends that the subject matter of claims 1, 2, 5, 6, 8–11, 13, and 14 would have been obvious over Kloba and Multer. Pet. 18–45. For the reasons given below, Petitioner has shown, by a preponderance of the evidence, that these claims would have been obvious.

a. Scope and Content of the Prior Art

(1) Overview of Kloba

Kloba describes techniques for enabling Web content to be loaded onto mobile devices and for users of the mobile devices to interact with the Web content while the devices are in an off-line mode. Ex. 1015, Abstract. Figure 1A, reproduced below, illustrates an example:

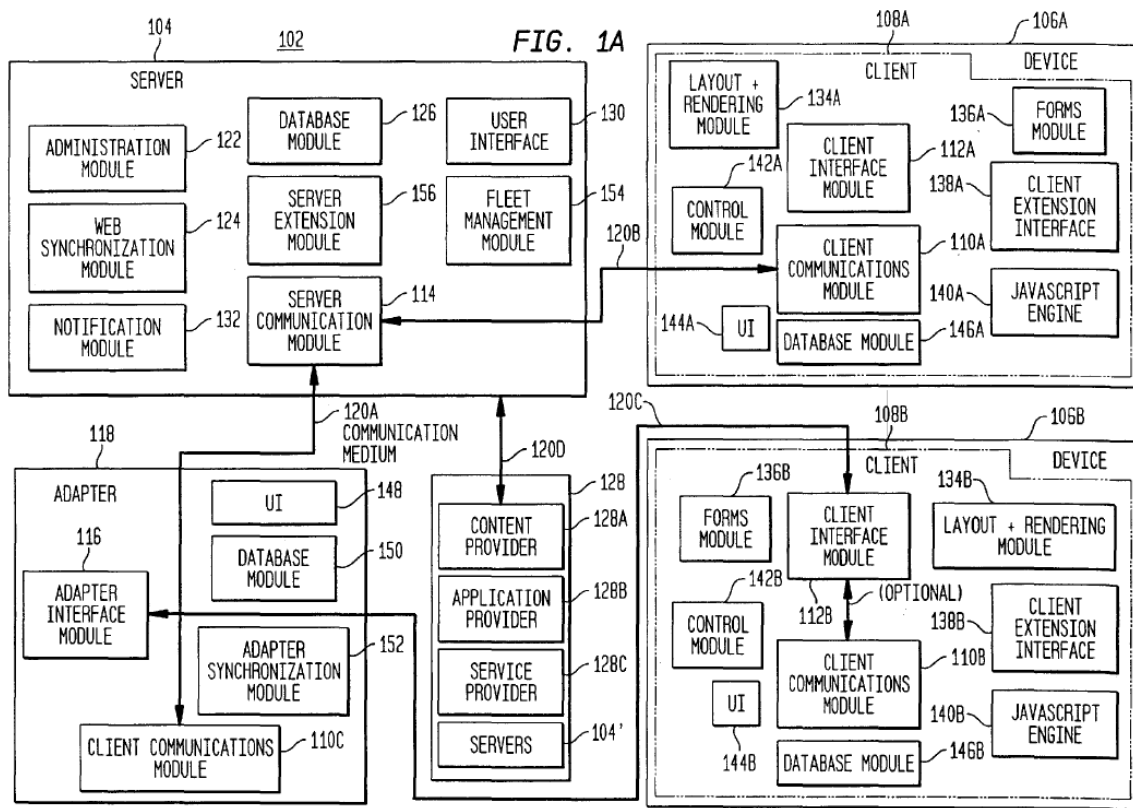


Figure 1A is a block diagram of data processing environment 102 including server 104, devices 106A, 106B, adapter 118, and content providers 128.

Id. at 7:21–27. The devices can include handheld computers, cellular phones, Internet-enabled phones, and personal data assistants (PDAs). *Id.* at 4:24–39 (Table 2). When a device includes software, hardware, and/or combinations thereof related to client functionality (e.g., layout and rendering, control, user interface, client interface, database), the device is a client (e.g., clients 108A and 108B correspond to devices 106A, 106B, respectively). *Id.* at 10:51–65. “Client communications module 110 enables the client 108 to interact with external entities, such as server 104. In embodiments, the client communications module 110 enables TCP/IP traffic.” *Id.* at 12:13–16.

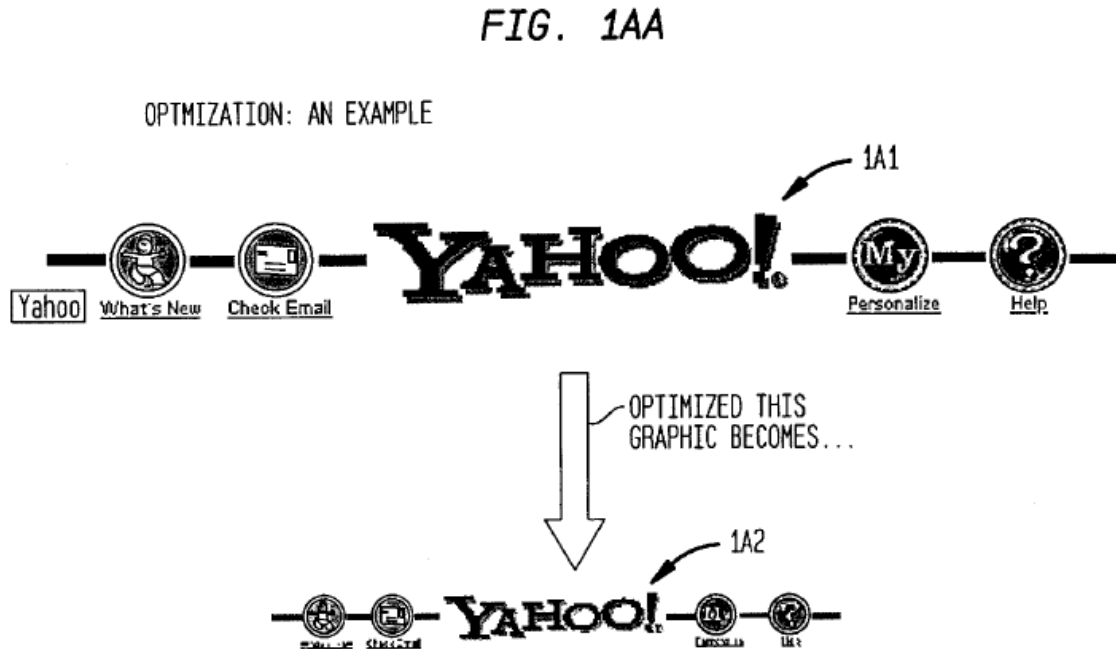
Server 104 maintains channels of data and adds selected channels to clients 108A, 108B. *Id.* at 8:4–6. A channel is a collection of objects, such as applications, services, images, movies, music, and links, that can be added to a client. *Id.* at 7:27–31. According to Kloba,

[t]he server 104 offers channels to clients 108. A client 108 may access the server 104 and view the collection of channels. The client 108 may then select any combination of the channels in the collection. The server 104 maintains a list of the channels associated with each of the clients 108.

During a synchronization process, the server 104 loads a device 108 with the channels associated with the client 108. Generally, the server 104 does this by obtaining from providers 128 the objects defined by the channels, and causing those objects to be stored on the client 108. Thus, during the synchronization process, the server 104 will load the client 108 with the selected channels. More particularly, the server 104 will load the client 108 with the objects associated with the channels.

Id. at 8:7–19.

Server 104 optimizes the Web content to display the content within parameters of the client devices 108, for example, scaling the content as shown in Figure 1AA, reproduced below:



Id. at 28:23–36. Figure 1AA illustrates an optimization of a Web site page for display on a handheld device. *Id.* at 28:30–31.

During a synchronization, control module 142 identifies “deltas” (differences between versions of content or objects) in the client databases identified by server 104 and sends the deltas to synchronization modules 155 (shown in Figure 1B) (generated by third parties) of server 104. *Id.* at 10:35–40, 19:51–67. Synchronization modules 155 synchronize the deltas with providers 128 and compile instructions to synchronize clients 108A, 108B with providers 128. *Id.* at 20:11–17. Control modules 142A, 142B on clients 108A, 108B then execute the instructions. *Id.* at 20:23–25.

A user of a device can subscribe to a channel when the device is off-line, such as through the use of the user interface of Figure 12, reproduced below:

FIG. 12



Figure 12 is a screen shot of a channel subscription page displayed on a client 108. The channels selected using this interface are loaded on the client during the next synchronization. *Id.* at 34:49–54.

(2) Overview of Multer

Multer describes systems for transferring data between two devices that require information to be shared between them. Ex. 1016, 5:11–13.

Figure 1, reproduced below, illustrates an example:

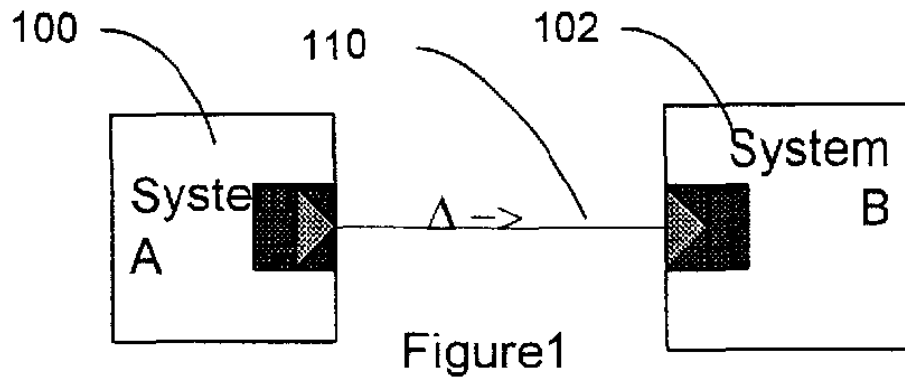


Figure 1 is a block diagram of a system using differencing routines. *Id.* at 4:45–47. Differencing transmitter 100 of System A examines a data structure of information to be transmitted to differencing receiver 102 of System B, extracts the information from System A, and converts it to difference information Δ . *Id.* at 5:57–6:8. Difference information Δ comprises only the changes to System B’s data that have occurred and instructions for implementing those changes on System B. *Id.* at 6:8–11. Differencing transmitter 100 transmits the difference information Δ to differencing receiver 102 via communication line 110, which can be “any direct coupling of the two systems which allows data to pass between the systems such as, for example, by means of serial ports, parallel ports, an Ethernet connection or other type of network, or an infrared link, or the like.” *Id.* at 5:60–65. “Difference information Δ received by differencing receiver 102 at System B is reconstructed at System B, and the changes reflected therein are updated on System B.” *Id.* at 6:16–19.

Multer describes examples of “push” synchronization (shown in Figure 16) and “pull” synchronization (shown in Figure 15). *Id.* at 35:4–8. According to Multer,

[e]ach device has its own triggering mechanism for initiating synchronization. Some devices, such as Windows clients and

Palm® [P]ilots[,] are triggered manually when the user presses a “sync” button. Other devices, such as a cellular telephone, may be triggered automatically after another device completes a sync. Regular, time-based triggers are supported as well.

Id. at 35:12–18.

*b. Differences Between Claim 1 and the Prior Art;
Reasons to Modify or Combine*

Regarding the preamble of claim 1, Petitioner contends that Kloba’s clients 108 are “consumer device assets” and that Kloba’s description of synchronizing channels and objects teaches “autonomously monitoring and managing” those assets. Pet. 22–24. In particular, Petitioner cites to Kloba’s examples of handheld computers, cellular phones, Internet-enabled phones, and PDAs as corresponding to “consumer device assets.” *Id.* at 22–23. As noted in Section II.A.1 above, cellular telephones and PDAs are consumer device assets. Thus, Kloba’s devices are consumer device assets. We also find that Kloba’s description of synchronizing channels and objects teaches monitoring and managing the devices, an allegation Patent Owner does not dispute, as Kloba’s server receives and exchanges information with a device during synchronization, changing the device’s contents (such as calendars, and channels) in the process. Ex. 1015, 5:30–35, 9:17–21, 20:51–56, 26:13–46.

Petitioner contends that, to the extent “autonomously monitoring” precludes receiving data as a result of a user-triggered synchronization, Multer teaches automatic synchronization without user involvement and a skilled artisan would have combined Multer’s teachings with Kloba’s. Pet. 25–27. Patent Owner does not contest that Kloba teaches autonomously

monitoring and managing. Nevertheless, Patent Owner does contest whether Kloba and Multer teach receiving communications with operational status information and consumer usage information having automatically resulted from preprogrammed conditions or programming instructions. PO Resp. 17–25. We address these related limitations below.

We also find that Kloba’s server 104, connected to clients 108A, 108B via communication medium 120, teach “a remote computer server platform” and consumer device assets “wirelessly connected to one or more communications networks,” as recited in claim 1. Ex. 1015, 4:48–52 (“Consequently, the invention includes software and methods for administering a server that manages the variables relevant to a mobile device/server environment.”), 4:59–63 (“Mobile devices to operate in conjunction with the Web, Internet, or intranet via a connection mechanism and then in disconnected mode or with the Web, Internet, or intranet in wireless mode with a continuous or a discontinuous connection mechanism.”); Pet. 23–24.

Kloba also teaches “a display apparatus for displaying the stored data content,” as recited in claim 1. *Id.* at 11:7–9 (“The rendering portion of module 134 is responsible for drawing items on the display (drawing bits to the screen).”). Patent Owner does not challenge these aspects of claim 1.

The parties dispute whether Kloba teaches “nonvolatile memory for storing files of data content for display to a consumer user of the device,” as recited in claim 1. As an initial matter, for the reasons given in Section II.A.2, “nonvolatile memory,” appearing in the preamble of claim 1, is not a limitation of claim 1. Thus, Petitioner does not need to show that Kloba teaches a nonvolatile memory for storing files of data content for

display. Moreover, even if nonvolatile memory is a limitation, Petitioner's evidence shows this, as we now explain.

In a description cited by Petitioner (Pet. 23–24 (citing Ex. 1015, 13:12–14:3)), Kloba describes implementing its various entities (including those cited as consumer device assets) using “[d]ata processing unit 103A” that can include main memory 103D, which, in turn, can be “RAM, ROM, or any other memory type, or combinations thereof.” Ex. 1015, 13:12–30. Those data processing units 103A also can include secondary storage devices 103E, such as hard drives 103F and computer program products 103H, which, in turn, “include, but are not limited to, floppy disks, ZIP™ and JAZ™ disks, memory sticks, memory cards, or any other medium on which objects may be stored.” *Id.* at 13:31–42.

Patent Owner argues that claim 1 requires a specific type of memory (nonvolatile) for storing specific files (files of data content for display) and that, in Kloba, files of data content for display are stored only in volatile memory. PO Resp. 11–13. As noted above, Kloba not only refers to ROM, but also describes “floppy disks, ZIP™ and JAZ™ disks, memory sticks, memory cards, or any other medium on which objects may be stored.” Ex. 1015, 13:31–42. Patent Owner argues that this disclosure merely teaches that a mobile device can include both nonvolatile and volatile memory, but does not teach that files of data content for display would have been stored in nonvolatile memory. PO Resp. 11–12. Patent Owner argues that Petitioner asserts that a skilled artisan could have used such nonvolatile memory but fails to show that the skilled artisan would have been motivated to do so. *Id.* at 15–16.

Patent Owner argues that Kloba repeatedly states that objects to be displayed are stored in on-device cache memory, which Patent Owner contends is an example of volatile memory. *Id.* at 12–13. Patent Owner argues that volatile memory provides an advantage of quick access and would have been needed to suitably display Kloba’s objects. *Id.* at 13–14 (citing Ex. 2009 ¶¶ 46). According to Patent Owner, a skilled artisan would have understood that nonvolatile memory would not have been fast enough to allow storing and retrieving of data content. *Id.* at 14 (citing Ex. 2009 ¶ 47). Dr. Sarrafzadeh, in turn, merely repeats Patent Owner’s argument and does not state the basis for his conclusion that nonvolatile memory would have been insufficient in Kloba’s devices. Ex. 2009 ¶ 47. Dr. Sarrafzadeh continues, citing patent applications that he contends show that PDAs at the time of the ’359 patent’s filing stored data in volatile memory to take advantage of immediate access to programs and data, and that nonvolatile memory was not byte addressable and, thus, would have required an extra step to display data. *Id.* ¶¶ 48–49. None of this, however, evidences that nonvolatile memory would have been unsuitable for Kloba’s devices.

Patent Owner contends that Petitioner’s expert admitted that Kloba does not expressly disclose using nonvolatile memory for storing files of data content for display. PO Resp. 16 (citing Ex. 2008, 275:19–276:12, 278:11–24); Sur-Reply 5–6 (same). We find no such admission in this testimony.

Petitioner does not contest that cache memory is volatile memory, or that the PDA embodiment of Kloba uses cache memory. Tr. 21:21–25, 22:6–14. Petitioner argues, however, that Kloba’s teachings are not limited to that embodiment. As Petitioner notes (Pet. 22–23), Kloba states that its

devices include handheld computers, Internet-enabled phones, and several other examples. Ex. 1015, 4:20–39 (Table 2).

In any case, we find that Kloba expressly describes storing files for display in nonvolatile memory. Kloba describes the use of a “data processing unit 103A that can be used to implement the entities shown in FIGS. 1A and 1B,” which “may be implemented using any number of data processing units 103A, and the configuration actually used is implementation specific.” Ex. 1015, 13:12–17. The data processing unit, in turn, includes main memory 103D, secondary storage devices 103E, and computer program product interfaces 103G. *Id.* at 13:27–36. As Petitioner explains (Pet. 23–24; Reply 4–6), Kloba expressly discloses storing objects in floppy disks, ZIP disks, JAZ disks, memory sticks, and memory cards, Ex. 1015, 13:31–43, which are examples of nonvolatile memory. Specifically, data processing unit 103A can include secondary storage devices, such as hard drives or computer program products, wherein “[e]xamples of computer program products 103H include, but are not limited to, floppy disks, ZIP™ and JAZ™ disks, memory sticks, memory cards, or any other medium *on which objects may be stored.*” Ex. 1015, 13:31–42 (emphasis added); *accord id.* at 13:43–44 (“The computer program products 103H include computer usable mediums in which objects may be stored.”). The objects stored in this nonvolatile memory include data to be displayed, such as multimedia files, image files, and video files. Ex. 1015, 3:63–4:19.

We agree with Petitioner (Reply 6–7) that disclosure of a preferred embodiment of a PDA with cache memory does not negate Kloba’s disclosure of storing files of data for display in nonvolatile memory, such as memory sticks and memory cards. Patent Owner’s expert testimony,

summarized above, is inconsistent with Kloba's express disclosure and, thus, entitled to little weight. *See Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1378 (Fed. Cir. 2017) (“[W]e must disregard the testimony of an expert that is plainly inconsistent with the record, or based on an incorrect understanding of the claim[s].” (second alteration in original) (citations and internal quotation marks omitted)).

Patent Owner asserts that Petitioner improperly waited until its Reply to raise Kloba's examples of floppy disks, ZIP disks, JAZ disks, memory sticks, and memory cards. Sur-Reply 3. To the contrary, Petitioner raised this in its Petition, at 23–24, and we explained its relevance in the Institution Decision, at 20–21.

Patent Owner also argues that the objects stored in the computer program products 103H would only be “computer programs (*e.g.*, control logic and software) and not objects for display.” Sur-Reply 3–4. Kloba explains the following:

Control logic or software may be stored in main memory 103D, secondary storage device(s) 103E, and/or computer program products 103H.

More generally, the term “computer program product” refers to any device in which control logic (software) is stored, so in this context a computer program product could be any memory device having control logic stored therein. The invention is directed to computer program products having stored therein software that enables a computer/processor to perform functions of the invention as described herein.

Ex. 1015, 13:47–57. This passage does not limit what is stored in Kloba's secondary storage devices and computer program products. Rather, it expands what can be stored in main memory, *i.e.*, control logic, like objects, can be stored in any of the available memory devices. We find that Kloba

broadly describes storing both objects (including files for display) and control logic on any of the available memories, including secondary storage devices and computer program products, which can be nonvolatile.

Regarding “data storage for storing registration information pertaining to each of the plurality of consumer device assets,” as recited in claim 1, Petitioner points to Kloba’s Figures 1S, 5A–5J, and 49–62, which are flowcharts and screen shots related to registering a client with a server, and the corresponding description in Kloba. Pet. 27 (citing Ex. 1015, 29:31–33:67, 36:51–54). We agree that Kloba’s clients are registered with its server. As explained above, Kloba describes its various devices, including its server, as having memory. We also find that this registration information is stored in database module 126 of Kloba’s server. Ex. 1015, 8:58–65; Pet. 27.

We also find that Kloba’s mobile devices can communicate with the server using TCP/IP, which uses “packet switched data messages,” as recited in claim 1. Ex. 1015, 9:57–67, 12:13–16, 21:67–22:1; Pet. 35. Thus, Kloba teaches

wherein the communications received by and sent from the remote computer server platform are transmitted over the one or more communications networks and comprise at least one selected from the group consisting of General Packet Radio Service (GPRS) data messages, Enhanced Data rates for GSM Evolution (EDGE) data messages, and *other packet switched data messages*,

as recited in claim 1 (emphasis added). Patent Owner does not contest these aspects of claim 1.

Claim 1 (emphases added) further recites

one or more receivers configured to receive communications sent, over the one or more communications networks, from the plurality of consumer device assets containing *operational status information* and *consumer usage information*, said communications having *automatically resulted* from at least one selected from the group consisting of preprogrammed conditions and programming instructions generated by the remote computer server platform.

As to “operational status information,” Petitioner contends that Kloba’s mobile devices send “state” information during synchronization, including “information relating to the devices’ memory specifications and characteristics, available storage space, screen size, color depth, on-device buttons, supported data types, and connection/network profile,” from client 108 to server 104. Pet. 28–29 (citing Ex. 1015, 23:62–63 (“[C]lient 108 sends state information to server 104 via client communications module 110.”), 24:48–52 (“the detection 410 of device/client state information by server 104”), 25:38–39 (“The synchronization 422 includes state information 426 and data 427 that is stored by server 104.”)). As explained in Section II.A.1 above, Patent Owner contends that “operational status information” is “information on the operational condition or state of the consumer device[] assets.” Prelim. Resp. 18. Under Patent Owner’s proposal, which is broader than Petitioner’s, we find that Kloba’s state information is “operational status information” and is received from “the plurality of consumer device assets” (clients 108) by “one or more receivers” (server communication module 114) of the “remote computer server platform” (server 104), as recited in claim 1.

We also find that operational status information is received via server communication module 114 of Kloba's server. Ex. 1015, 9:57–10:4; Pet. 30. This teaches “one or more receivers configured to receive communications sent, over the one or more communications networks, from the plurality of consumer device assets,” as recited in claim 1.

The parties dispute whether Kloba teaches one or more receivers for receiving “consumer usage information” from the consumer device assets and, if so, whether the communications “automatically resulted” from preprogrammed conditions or programming instructions. We find that Kloba teaches this limitation.

Petitioner points to two examples of information transmitted by Kloba's clients and received by the server that it contends are consumer usage information. First, referring to Figure 12 of Kloba (reproduced above), Petitioner argues that Kloba describes receiving, at the server, information from a mobile device related to channels selected by a user of a remote device while that device is in an off-line mode. Pet. 29 (citing Ex. 1015, 34:50–52). Second, Petitioner refers to Kloba's description of receiving information related to user-selected preferences from the mobile devices at the server. *Id.* (citing Ex. 1015, 35:12–15, Fig. 17). Petitioner contends that this information is received through server communication module 114. *Id.* at 30 (citing Ex. 1015, 9:57–10:4).

In the Preliminary Response, Patent Owner proposed a construction of “consumer usage information,” namely “information identifying the manner in which a consumer has used a consumer device asset,” and argued that information regarding requests for channels yet to be downloaded onto a mobile device does not identify the manner in which a consumer has used

the mobile device. Prelim. Resp. 27–28. We preliminarily determined that a user selecting a channel or preference on a mobile device, per the user interfaces of Figures 12 and 17, are uses of the mobile device and that, under Patent Owner’s proposed construction, information indicating that the user has selected a channel or preference using the mobile device is “information identifying the manner in which a consumer has used a consumer device asset.” Dec. 22–24.

As noted above, Patent Owner now contends that “consumer usage information” should be construed to mean “information that identifies the *particular* manner in which a consumer has used a consumer device asset.” PO Resp. 53–56. Patent Owner argues that the information sent by Kloba’s client to the server for interactions with Figures 12 and 17 would not “*directly*” identify to the server the “particular” manner in which a consumer has used the client. *Id.* at 56–57, 60–61. According to Patent Owner, Kloba teaches a “multitude of different ways that a consumer could use the client to generate channel subscription requests” and that the server would not know whether the interface of Figure 12, in particular, was used to generate the requests. *Id.* at 57–60. Patent Owner makes a similar argument for the interface of Figure 17. *Id.* at 61–64. As explained in Section II.A.3 above, “consumer usage information” should not be limited to information that identifies a particular usage. Rather, we determine that this term encompasses information relating to a consumer’s use of a device asset (client). We find that information sent from the client indicating that channels and preferences have been selected by a consumer constitutes information relating to a consumer’s use of a client and, thus, constitutes

consumer usage information. Accordingly, Patent Owner's arguments are not persuasive.

Patent Owner also argues that the information of Figure 12 is "information indicative of preferences," recited in claim 9, and that the information of Figure 17 is "operational status information," recited in claim 1, which, Patent Owner argues, are categorically different from "consumer preference information." PO Resp. 48–51. This argument is inapposite, though, as the question is whether the information of Figures 12 and 17 constitutes "consumer usage information," not whether the information also might be operational status information or preference information. As discussed above, Petitioner relies on other information, i.e., "state information," in Kloba as representing "operational status information," and Patent Owner does not dispute Petitioner's assertion that the combination teaches operational status information. Patent Owner also argues that another example in Kloba, of collecting client behavior and sending such information to a service provider, is closer to what it identifies as consumer usage information described in the '359 patent. *Id.* at 51–53 (comparing Ex. 1003, 3:60–4:3, to Ex. 1015, 2:31–33, 17:19–23). Whether this might be an additional example of consumer usage information does not persuasively rebut that the information identified by Petitioner is also consumer usage information.

As to "said communications having automatically resulted from at least one selected from the group consisting of preprogrammed conditions and programming instructions generated by the remote computer server platform," as recited in claim 1, Petitioner cites to a combination of Kloba and Multer. As noted above, Petitioner presents its analysis for the language

in claim 1's preamble, "autonomously monitoring," and incorporates that analysis for communications of consumer usage information having resulted "automatically." Pet. 25–27, 31. In particular, Petitioner cites to Multer as teaching automatic synchronization without user involvement (e.g., through description of automatic synchronization after another device has synchronized, or through regular, time-based triggers), to the extent we determine that "autonomously monitoring," in the preamble of claim 1, precludes receiving data as a result of a user-triggered synchronization. Pet. 25 (citing Ex. 1016, 35:12–18), 31 (same). At the hearing, Petitioner clarified that it is not contending that a synchronization triggered by a user's manual press of a button or act of placing a PDA in a cradle constitutes receiving information automatically resulting from preprogrammed conditions or programming instructions. Tr. 30:12–31:19.

Petitioner argues that Kloba describes examples of consumer device assets, such as cellular phones and handheld computers, that do not have a sync button (implying automatic synchronization), but acknowledges that Kloba does not expressly disclose how synchronization of such devices would have been initiated. *Id.* at 25, 31. Petitioner contends that Multer provides the detail lacking in Kloba. *Id.* at 25–26, 31. Petitioner, relying on Dr. Kesidis, argues that automatic synchronization, as in Multer, would have obviated the need for manually triggering synchronization and would have allowed content on mobile devices to be consistently up-to-date. *Id.* at 26–27, 31 (citing Ex. 1009 ¶¶ 191–193, 827–828). Dr. Kesidis testifies that incorporating automatic synchronization in Kloba would have made the devices easier to operate and would have been consistent with the trend towards automation in designing mobile devices. Ex. 1009 ¶ 191.

Dr. Kesidis also testifies that there are only a limited number of ways to trigger synchronization, manually and automatic, and that it would have been a routine design choice to select automatic synchronization. *Id.* ¶ 194. Petitioner contends that the combined system would have synchronized the devices “automatically,” based on the occurrence of an event or at regular intervals, and that such time-based synchronization is a result of “preprogrammed conditions,” as recited in claim 1. Pet. 31.

Patent Owner argues that Multer describes automatic synchronization only initiated by the server and in the direction of the server to the remote device (Multer refers to this as the “pull” direction, as opposed to the “push” direction, from the device to the server). PO Resp. 19–21. Patent Owner contends that the claimed synchronization direction corresponds to a “push” synchronization and, thus, Multer does not disclose the limitation missing from Kloba. *Id.*

In the Reply, Petitioner argues that it does not rely on Multer to show the direction of communications. Rather, Petitioner cites Multer for the teaching that communication from one device to another can be initiated automatically. Reply 22. We agree with Petitioner. Although the primary embodiment described by Kloba is in the context of a PDA that synchronizes with a server upon manual initiation at the client (e.g., a button press or placing the device into a cradle), Kloba makes clear that its invention encompasses other embodiments, such as cellular phones and Internet-enabled phones that lacked synchronization buttons. Ex. 1015, 4:24–39 (Table 2), 8:27–39, 31:28–32. Thus, Kloba itself implies that, in some embodiments, its clients would be synchronized through a mechanism other than through a synchronization button or cradle. Multer provides an

example in which synchronization of cellular telephones is triggered automatically, as opposed to Palm Pilots, which are triggered through a synchronization button (as in Kloba). Ex. 1016, 35:12–18. Thus, Multer expressly describes automatic synchronization as an alternative to a synchronization button when the device is a cellular telephone rather than a Palm Pilot. Multer shows that automatic synchronization was a predictable alternative to manual synchronization in the context of cellular phones. See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

We also disagree with Patent Owner that Multer’s teachings are limited to automatic synchronization in the “pull” direction. Multer depicts “pull” synchronization in Figure 15 and “push” synchronization in Figure 16. Ex. 1016, 35:4–8, 37:39–40. Patent Owner’s argument appears to hinge on the placement of Multer’s comparison of Palm Pilots and cellular phones under the heading “Pull Synchronization.” *Id.* at 35:3, 35:12–18. Under this heading, Multer first introduces Figures 15 and 16, noting the differences in direction between “push” and “pull,” and notes that a pull synchronization always is performed before a push synchronization. *Id.* at 35:3–11. Although this is under the heading “Pull Synchronization,” the discussion applies to both push and pull. Multer then states the following:

Each device has its own triggering mechanism for initiating synchronization. Some devices, such as Windows clients and

Palm® [P]ilots[,] are triggered manually when the user presses a “sync” button. Other devices, such as a cellular telephone, may be triggered automatically after another device completes a sync. Regular, time-based triggers are supported as well.

Id. at 35:12–18. This discussion includes push synchronization, as it describes an alternative to the Palm Pilot’s manual synchronization trigger, which Patent Owner contends initiates a push synchronization in Kloba (PO Resp. 18–19). This discussion is followed by more general discussion of the types of data to synchronize and the types of triggering events that might occur, such as HTTP requests sent to the server. *Id.* at 35:24–37. Multer then describes Figure 15 expressly starting at column 35, line 49. We find that Multer’s prior discussion, including the comparison of Palm Pilots and cellular phones (Ex. 1016, 35:12–18), is general discussion applicable to both push and pull synchronization. Thus, Multer describes automatic initiation of both push and pull synchronization.

Patent Owner’s arguments to the contrary are not persuasive. As Patent Owner argues (PO Resp. 21–24), Multer describes a pull synchronization as starting “when the triggering event, described above, triggers a synchronization request,” while it describes push synchronization as starting when “a synchronization event occurs.” Ex. 1016, 35:49–51, 37:40–42. We do not view this difference in language, however, as an attempt by Multer to distinguish between manual and automatic synchronization. Patent Owner also argues that Multer teaches resolving conflicts using a manual process. PO Resp. 24–25 (citing Ex. 1016, 36:1–4). Nevertheless, Multer is only cited for a teaching of automatic initiation of synchronization, and Petitioner does not argue that Multer’s entire process would have been incorporated into Kloba. Thus, Patent Owner’s argument

is not persuasive. In sum, we find that the combination of Kloba and Multer teaches

receiving at the remote computer server platform
communications sent from the plurality of consumer device
assets containing operational status information and consumer
usage information, said communications having automatically
resulted from at least one selected from the group consisting of
preprogrammed conditions and programming instructions
generated by the remote computer server platform
as recited in claim 1.

Patent Owner also takes issue with Petitioner's asserted reasons to combine Kloba and Multer. Patent Owner, relying on Dr. Sarrafzadeh's testimony, repeats its position that Multer only teaches pull synchronization. PO Resp. 26 (citing Ex. 2009 ¶ 75). We explain above why this argument is incorrect. Patent Owner next contends that "Kloba operates under a different [principle] of operation and is directed to providing an off-line solution when the device does not have access to the Internet or a network and, therefore, could not automatically sync under any circumstances" and, thus, "Multer's alleged automatic synchronization would not even work in Kloba's devices when they were operating off-line." PO Resp. 26–27 (citing Ex. 2009 ¶¶ 76–78). This argument is contradicted by Kloba, which describes cellular telephones and Internet enabled phones as devices within the scope of its disclosure. Ex. 1015, 4:24–39 (Table 2). In any case, Patent Owner improperly argues that one would not bodily incorporate Multer into Kloba, when Petitioner is relying on the combined teachings of those references. *See In re Mouttet*, 686 F.3d 1322, 1332–33 (Fed. Cir. 2012) ("It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of

elements. . . . Rather, the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art.”).

Patent Owner also argues that Kloba addresses device-to-server synchronization while Multer addresses device-to-device synchronization and, for this reason, a skilled artisan would not have looked to Multer to improve Kloba. PO Resp. 28–29. Patent Owner highlights other differences between Kloba and Multer, such as Kloba’s server storing content while Multer’s server stores changes to content, but not the content itself. *Id.* at 29–30. Patent Owner also argues that, in Kloba, devices in alternative embodiments, such as cellular phones, could have been synchronized manually. PO Resp. 33–34. These arguments overlook that Multer itself describes automatic synchronization as an alternative to manual synchronization when a Palm Pilot (the preferred embodiment of Kloba) is substituted for a cellular phone (an alternative embodiment of Kloba), which is the teaching for which Multer is cited. Ex. 1016, 35:12–18.

Patent Owner also disputes Petitioner’s contention that automating Kloba’s synchronization would have been an improvement, and offers competing testimony that a skilled artisan would have preferred manual control of synchronization. PO Resp. 34–36 (citing Ex. 2009 ¶ 91).

Dr. Sarrafzadeh testifies as follows:

[A] consumer would know when it wanted to upload any changes or information to the server and would not want the server to conduct unnecessary and time consuming synchronizations that would drain battery and interrupt other uses of the device. This is especially true at the time of the invention where a synchronization process on a PDA (e.g.,

Palm) could take several minutes to complete and would interrupt normal operation of the device.

Ex. 2009 ¶ 91. We have considered this testimony, but are persuaded by Dr. Kesidis (Ex. 1009 ¶¶ 191–194), in light of the express disclosure in Multer of automatic synchronization for use with cellular telephones (as an alternative to manual synchronization for PDAs), that a skilled artisan would have found automatic synchronization advantageous. Petitioner also points out that automatic synchronization need not be the only possible choice, just that it be considered a valuable option by the skilled artisan.⁹ Reply 24. We find that selecting automatic synchronization would have been a routine design choice, from a limited number of options, and would be prompted by a skilled artisan’s desire to further automate cellular telephone technology, especially in light of Multer’s express disclosure of doing so. Thus, we find that a skilled artisan would have had reasons to combine the teachings of Kloba and Multer.

Claim 1 further recites “one or more processors configured to automatically process the received operational status information and the received consumer usage information according to pre-programmed conditions, the remote computer server platform thereby monitoring the plurality of consumer device assets.” Kloba describes server 104 receiving its example of operational status information and two examples of consumer usage information (that of Figs. 12 and 17) via server communication

⁹ Patent Owner characterizes this as a new argument. Sur-Reply 17–18. We disagree. Petitioner simply responds to Patent Owner’s argument. Patent Owner also argues that Petitioner relies, for the first time, on Multer’s description of regular time-based triggers for synchronization. *Id.* Nevertheless, Petitioner relied on this evidence in the Petition, at 25–26.

module 114 during a synchronization with a mobile device. Ex. 1015, 20:51–53, 21:36–49, 23:62–24:3, 24:48–52, 25:38–41; Pet. 31–32. We find that Kloba’s server includes one or more processors. Ex. 1015, 13:12–26.

Kloba describes examples of processing operational status and consumer usage information. Ex. 1015, 8:12–19 (“During a synchronization process, the server 104 loads a device 108 with the channels associated with the client 108. Generally, the server 104 does this by obtaining from providers 128 the objects defined by the channels, and causing those objects to be stored on the client 108. Thus, during the synchronization process, the server 104 will load the client 108 with the selected channels. More particularly, the server 104 will load the client 108 with the objects associated with the channels.”), 24:10–18 (“In step 176F, the web synchronization module 124 obtains an object from a provider 128. In one embodiment, the object is content which conforms to that which is requested by client’s 108 state information, although the object can be any entity, such as an application, service, etc. In step 176G, the web synchronization module 124 translates/transforms/optimizes the object for use by a particular client. The state information of the device 106 and/or client 108 is considered in this optimization process.”). We credit Dr. Kesidis’s uncontroverted testimony that a “[person of ordinary skill in the art] would have understood that, in order to perform any of these tasks, Kloba’s server must necessarily be pre-programmed with software conditions that cause the server to perform the tasks.” Ex. 1009 ¶¶ 230, 841–842. Accordingly, we find that Kloba teaches this limitation of claim 1.

Claim 1 further recites “one or more transmitters configured to send communications, over the one or more communications networks.”

We find that Kloba's server communication module 114 is a transmitter configured to send communications to clients 108 over the communications network. Ex. 1015, 9:57–10:4; Pet. 33.

The parties dispute whether Kloba and Multer teach “one or more transmitters configured to send communications. . . containing management instructions that cause the stored data content files of one or more assets to be automatically modified based upon the results of having processed at least some of the received consumer usage information,” as recited in claim 1.

Petitioner points to the description in Kloba of server 104 loading device 108 with selected channels during a synchronization. Pet. 33–34. Citing to Dr. Kesidis's testimony, Petitioner argues that, to do so, Kloba's server necessarily must compile and send instructions to the device that instruct the device to perform the particular action of synchronizing its content with the content of outside providers. *Id.* (citing Ex. 1009 ¶¶ 234–235). Petitioner further cites to the description in Kloba of server 104 sending instructions to clients 108 during synchronization and the clients executing those instructions such that channel information is copied, added, or removed from the clients. *Id.* at 34 (citing Ex. 1015, 5:48–50, 8:13–16, 20:16–17, 20:23–25). Petitioner argues that, because the instructions cause the mobile device to synchronize its content with the content of outside providers, they are management instructions. *Id.* at 33–34 (citing Ex. 1009 ¶¶ 235–236, 845–846). As explained in Section II.A.1 above, “management instructions” is at least as broad as “commands for a device asset to perform particular actions.” Thus, we find that the instructions are “management

instructions that cause the stored data content files of one or more of the plurality of consumer device assets to be automatically modified.”

Patent Owner contends that the instructions identified by Petitioner are not “based upon the results of processing at least some of the received consumer usage information,” as recited in claim 1. Patent Owner argues that the instructions identified by Petitioner only pertain to “delta synchronization,” or the updating of files that already are stored on the client to reflect changes to those files relative to the versions of those files at the content providers. PO Resp. 37–41. Patent Owner argues that Kloba’s deltas are synchronized using a different process than the processes used to load new channels (selected using Figure 12) or preferences (selected using Figure 17) onto the device. *Id.* at 41–43. Specifically, Patent Owner argues that delta synchronization is shown in Kloba’s Figure 1I1, new channel synchronization is shown in Figure 1X, and preference information synchronization is shown in Figure 1K. *Id.*

In reply, Petitioner contends that each of these synchronizations is part of the same overall synchronization process, and that all changes, whether new channels or deltas, are communicated at the same time, during a “one-up”/“one-down” process. Reply 8. We agree with Petitioner. According to Kloba, Figure 1I1 depicts the “full normal synchronization step.” Ex. 1015, 19:47. In that process, Kloba’s client 108 identifies deltas in its database (sets of differences in the states of objects currently being offered by content providers and objects stored in its database) and sends those deltas to server 104. *Id.* at 19:51–67 (Fig. 1I1, steps 172A, 172B). Kloba’s process only transmits data from the client to the server once during a synchronization. *Id.* at 19:65–67 (“This enables the client 108 to only

make one transmission to server 104 during the synchronization process, thereby improving performance.”), 20:19–21 (“[T]he invention achieves a one-up/one-down synchronization process, thereby improving performance.”). Thus, any requests for new channels or changes to preferences (pursuant to Figs. 12 and 17) are transmitted as well.

The server then synchronizes the deltas from the client with the content providers, compiles instructions to synchronize the client with the providers, and sends the instructions to the client, which executes the instructions. *Id.* at 20:1–25 (Fig. 111, steps 172C–172F). According to Kloba, “this is the only transmission from the server 104 to the client 108 during the synchronization process. Thus, the invention achieves a one-up/one-down synchronization process, thereby improving performance.” *Id.* at 20:18–21. All instructions and objects (including deltas, new channels, and preferences) are sent at the same time.

Figure 1X is consistent with Figure 111. Figure 1X is “another view of the synchronization process,” not a separate synchronization process for new channels. *Id.* at 20:50. According to Kloba, “the device 106 or client 108 provides information about itself and the content it wishes to receive in a single ‘up’ transmission, and the server 104, upon identifying the device 106 or client 108, returns the desired information along with new synchronization changes in a single ‘down’ transmission.” *Id.* at 20:51–56. Thus, Figure 1X reaffirms that Kloba sends all instructions and objects (including deltas, new channels, and preferences) in a single transmission, not as separate synchronizations as Patent Owner argues. The server communicates its single set of instructions to the client as a result of processing all of the information it receives in the single-up transmission

from the client. This includes deltas, requests for new channels, and changes to preferences. *Id.* at 8:7–19, 19:51–22, 20:50–56. Thus, we find that the server sends communications containing management instructions to the client “based upon the results of processing at least some of the received consumer usage information,” as recited in claim 1.

Patent Owner argues that Dr. Kesidis conceded that Kloba describes separate synchronization processes for new objects, preference information, and deltas. PO Resp. 43–44 (citing Ex. 2008, 328:14–25, 334:9–18, 372:13–16). To the contrary, although Dr. Kesidis testified regarding synchronization of individual types of information, he was consistent that each is part of a more broadly described synchronization process. Ex. 2008, 329:1–6, 335:1–12. In any case, he did not concede that the processes for synchronizing different types of information were separate.

Patent Owner also argues that Kloba’s disclosure of loading new channels to the client does not imply loading of instructions to process objects associated with the new channels. PO Resp. 44–47. Rather, Patent Owner argues, Kloba’s server would have been sophisticated enough to prepare and format the new objects, and the device would have included appropriate software such that the client could display the new objects with no instructions. *Id.*; Sur-Reply 9–10. Patent Owner points to description that Kloba’s server optimizes files for display according to state information about the device. PO Resp. 45 (citing Ex. 1015, 6:4–41, 15:3–7, 21:49–59, 24:15–45, 28:20–36). For example, Kloba disclose that “[i]f the device sends down the need for the graphic on a page for a device with a display

that is 27 cm wide and in grayscale, the server sends its best version of a graphic optimized for that environment.” Ex. 1015, 6:38–41.

Patent Owner’s argument is based on its proposed construction, which requires the management instructions be based upon the results of processing at least some of the received consumer usage information. As explained in Section II.A.4 above, claim 1 encompasses that the sending of communications containing management instructions be based upon the results of such processing. Kloba describes sending instructions that cause the data content files on the client to be modified. Ex. 1015, 19:22–32, 19:36–38, 20:13–17, 20:21–25. Those instructions are sent in communications as part of the synchronization process that is based, at least in part, on the processing of new channel (Fig. 12) and preference (Fig. 17) information. *Id.* at 8:7–19, 19:60–20:25. This is sufficient to show this limitation.

In sum, Petitioner has shown that the combination of Kloba and Multer teaches each limitation of claim 1 and that a skilled artisan would have had persuasive reasons to combine the teachings of those references in the manner claimed.

c. Differences Between Claims 2, 5, 6, 8, 13, and 14 and the Prior Art; Reasons to Modify or Combine

Claims 2, 5, 6, 8, 13, and 14 depend from claim 1. Regarding claim 2, we find that Kloba teaches communication over the Internet. Ex. 1015, 4:45–63, 5:30–32, 9:60–66. Thus, Kloba teaches “wherein the one or more communications networks comprise at least one selected from the group

consisting of a cellular mobile telecommunications network and the Internet,” as recited in claim 2.

Claim 5 recites that the remote computer server platform is “configured to send and receive communications over the one or more communications networks to and from the plurality of consumer device assets that are encrypted according to a key pair encryption scheme.” We find this is taught by Kloba’s description of using RSA encryption, which Dr. Kesidis testifies requires a pair of keys to encrypt and decrypt communications. Ex. 1015, 35:45–46, Figs. 28, 30, 34; Ex. 1009 ¶¶ 246–252, 853; Pet. 36–39.

Claim 6 recites that the remote computer server platform is configured “to include in the respective communications sent to each of the plurality of consumer device assets a unique identifier of that particular consumer device asset.” Dr. Kesidis testifies that, when Kloba’s network is operating with TCP/IP, data packets sent over the Internet must include the intended target device’s “IP address,” which Dr. Kesidis testifies is a unique identifier for the target device, as every device on the Internet has a unique IP address. Ex. 1009 ¶ 855; Pet. 39–40. We credit this uncontroverted testimony and find that Kloba and Multer teach each limitation of claim 6.

Claim 8 recites

wherein the automatic modification of the stored data content files of the one or more consumer device assets includes at least one selected from the group consisting of storing one or more new data content files on said assets, updating one or more existing stored data content files on said assets, and deleting one or more existing stored data content files from said assets.

We find that Kloba teaches this in that it describes instructions for “copying, adding, filtering, removing, updating and merging the information between a client and a server.” Ex. 1015, 5:48–50; Pet. 40.

As to claim 13, we find that Kloba teaches “management instructions causing at least one selected from the group consisting of automatic deletion of one or more existing stored data content files from the at least one asset, and automatic updating of one or more software programs stored on the at least one asset.” Ex. 1015, 5:48–50 (“removing,” “updating and merging”); Pet. 44.

Claim 14 recites that the remote computer server platform further comprises “nonvolatile memory for storing information comprising operational details for each of the consumer device assets.” Kloba teaches this limitation as well. Ex. 1015, 23:28–29 (“state information (and associated functionality) associated with clients 108 is maintained or cached on the server 104”); Pet. 44–45. As explained above, Kloba’s entities, including the server, can be implemented with data processing unit 103A that can include various forms of nonvolatile memory. Ex. 1015, 13:12–42.

In sum, we find that Kloba teaches the additional limitations of claims 2, 5, 6, 8, 13, and 14. As explained for claim 1 above, and is equally applicable here, a skilled artisan would have had reasons to combine the teachings of Kloba and Multer in the manner claimed. Patent Owner does not challenge Petitioner’s allegations as to these dependent claims.

*d. Differences Between Claims 9–11 and the Prior Art;
Reasons to Modify or Combine*

Claim 9 depends from claim 1 and recites that the remote computer server platform further comprises “nonvolatile memory for storing information indicative of preferences that one or more individual consumer users of the plurality of consumer device assets have for particular data content files.” Petitioner (Pet. 41) contends that the following description in Kloba teaches “preferences . . . for particular data content files” indicated by a consumer user:

The notification module 132 sends objects to clients 108 beyond objects related to channels associated with clients 108. Such objects could be requested by client 108 in advance. For example, a client 108 could ask for a notification when an event happens, such as when a stock reaches a target price.

Ex. 1015, 10:5–10. As a second example, Petitioner (Pet. 41) points to description that Kloba “maintains a list of the channels associated with each of the clients 108.” Ex. 1015, 8:9–11. We agree with Petitioner and find that both are examples of user preference information stored on the server. In the first, a user has indicated a preference, stored on the server, to receive data content files (notification objects) when a stock has reached a target price. In the second, the user has indicated a preference for receiving data content files related to certain channels, and that preference is maintained on the server. As explained above, Kloba’s entities, including the server, can be implemented with data processing unit 103A that can include various forms of nonvolatile memory. Ex. 1015, 13:12–42.

Claim 10 depends from claim 9 and recites
wherein the one or more transmitters are configured to send
communications containing one or more additional

management instructions that cause the stored data content files of one or more assets to be automatically modified based upon the results of having processed at least some of the consumer preference information, the remote computer server platform thereby further managing the plurality of consumer device assets.

As to the first example raised for claim 9, Petitioner argues that Kloba's server 104 sends "an appropriate notification(s)/object(s)" to client devices 108. Pet. 42 (quoting Ex. 1015, 10:10–12). As to the second example, Petitioner argues that server 104 sends to clients 108 channels identified to be similar to those already selected. *Id.* (citing Ex. 1015, 10:12–17). Petitioner asserts that the information of each of these examples is sent immediately or upon the next synchronization between server 104 and clients 108. *Id.* (citing Ex. 1015, 10:20–24). Petitioner argues that the management instructions discussed for claim 1 could include additional instructions based on processing the alleged preference information. *Id.* at 42–43 (citing Ex. 1015, 8:16–17, 10:15–24, 20:13–17).

Patent Owner's arguments track those advanced for the management instructions of claim 1. *See, e.g.*, PO Resp. 65 ("[A]s explained above with respect to the 'management instructions' required by claims 1 and 20, Kloba's 'instructions' are only compiled based on ***delta synchronization*** involving changes to ***existing content or objects*** already stored on the device and are not based on the processing of the alleged consumer usage information of Figure 12 (selection of a new channel to be added to the device) and Figure 17 (local operational parameter preference settings)."), 66–67 ("[A]s discussed above with respect to the management instructions of claims 1 and 20, since those objects (notifications or similar channels) being sent the devices by the server are new objects that were never on the

devices, the delta synchronization process would not be involved and the related instructions would not be compiled.”), 67 (“[A]s explained above with respect to the management instructions of claims 1 and 20, since the server optimizes the objects prior to sending to the devices and the devices have operating systems (including layout and rendering module 134 and browser applications) for displaying those objects, no instructions from the server to the devices are needed for handling those objects.”). These arguments are unpersuasive for the same reasons given for claim 1, above. In particular, Patent Owner’s arguments depend on a construction that the identified additional management instructions are based on the results of processing consumer preference information. *Id.* at 65. Similar to claim 1, claim 10 is broad enough to include sending of communications based on consumer preference information.

Claim 11 depends from claim 10. We find that Kloba teaches management instructions that include “storing one or more new data content files on said assets, updating one or more existing stored data content files on said assets, and deleting one or more existing stored data content files from said assets.” Ex. 1015, 10:6–24; Ex. 1009 ¶¶ 268–270, 865; Pet. 43. For example, as Dr. Kesidis testifies, if a notification object or data content file, or some prior version of that object already exists on the device, the object sent from the server would be an update to the existing stored data content file. Ex. 1009 ¶ 269.

In sum, we find that Kloba teaches the additional limitations of claims 9–11. As explained for claim 1 above, and is equally applicable here, a skilled artisan would have had reasons to combine the teachings of Kloba and Multer in the manner claimed.

e. Conclusion of Obviousness

As explained above, the combination of Kloba and Multer teaches each limitation of claims 1, 2, 5, 6, 8–11, 13, and 14. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Kloba and Multer. Patent Owner does not introduce or argue objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that the subject matter of claims 1, 2, 5, 6, 8–11, 13, and 14 would have been obvious over Kloba and Multer.

3. Alleged Obviousness of Claims 3, 7, 12, 16–18, 20, and 22–30 over Kloba, Multer, and Loughran

Petitioner contends that the subject matter of claims 3, 7, 12, 16–18, 20, and 22–30 would have been obvious over Kloba, Multer, and Loughran. Pet. 45–59. For the reasons given below, we agree with Petitioner.

a. Scope and Content of the Prior Art—Overview of Loughran

Loughran describes a system for performing autonomous data transfer between an email server and a mobile device such as a notebook computer. Ex. 1011, Abstract, Fig.1. The mobile device connects to the email server via a wireless data connection and downloads the email. *Id.* at Abstract. For example, the email server compiles an SMS message incorporating a digital signature and transmits the email to the mobile device using SMS messages sent in accordance with the GSM short messaging service. *Id.* at Abstract, ¶¶ 37–38. Loughran also notes that

it is usual for laptops and other mobile computing devices to be switched off when not in use. . . . The alert module [GSM transceiver] associated with the mobile device could be maintained in a low power consumption standby mode and on receipt of an SMS message containing an “EMAIL” header, power up the notebook.

Id. ¶ 40.

b. Differences Between Claims 3, 7, 12, 16–18, 20, and 22–30 and the Prior Art; Reasons to Modify or Combine

Claims 3, 6, 7, 12, and 16–18 depend, directly or indirectly, from claim 1. These claims include additional details related to the communications networks to which the consumer device assets connect.

Petitioner admits that

[a]lthough both Kloba and Multer teach that mobile devices may be a “cellular phone” (Kloba at 10:41–50; Multer at 8:1–9), neither states how the phone’s *cellular network* may be used to connect to the server. Nor does either reference teach any particular type of cellular network.

Pet. 47 (citing Ex. 1009 ¶¶ 283, 873). Petitioner argues that Loughran contributes the details regarding the communications networks that would have been used by Kloba and Multer. *Id.* at 46–47. Dr. Kesidis testifies that “GSM was just one of two dominant cellular communications technologies, with cdmaOne being the other.” Ex. 1009 ¶ 285. Petitioner argues that “using the GSM network disclosed in Loughran would have been a ‘routine design choice’ and one of ‘limited number of known’ solutions for communicating using the cellular phones disclosed in Kloba and Multer.” Pet. 47–48 (quoting *Slot Speaker Techs., Inc. v. Apple Inc.*, 680 F. App’x 932, 941 (Fed. Cir. 2017) (nonprecedential); citing Ex. 1009 ¶ 285, 873).

We credit Dr. Kesidis's uncontroverted testimony that GSM, as discussed in Loughran, was a dominant cellular communications technology and that it would have been routine to incorporate in it the system of Kloba and Multer. Ex. 1009 ¶¶ 284–285.

Claim 3 depends from claim 2 and recites “wherein the wireless connection between at least one of the plurality of consumer device assets and the one or more communications networks complies with at least one selected from the group consisting of Global System for Mobile Communications (GSM) air interface standards” We credit Dr. Kesidis's uncontroverted testimony that GSM, as discussed in Loughran, was a well-known and widely-implemented standard that would have been appropriate for the system of Kloba. Ex. 1009 ¶¶ 290–291, 875; Pet. 48–49.

Similarly, claim 18 recites “wherein the one or more communications networks comprise a cellular mobile telecommunications network and the Internet.” We find that GSM is a cellular mobile telecommunications network. Ex. 1009 ¶¶ 289, 322–323, 887. As noted above, Kloba teaches that its communications network can include the Internet. Ex. 1015, 4:45–63. Thus, we find that Kloba, Multer, and Loughran teach each limitation of claim 18.

Claim 7 depends from claim 1 and recites that the remote computer server platform is configured to “include in at least one communication sent to at least one of the consumer device assets a required coded number.” Dr. Kesidis testifies that Loughran's SMS message incorporates a digital signature, which is a coded number authenticated by a mobile device. Ex. 1009 ¶¶ 639–642, 877; Pet. 50–52. We credit this uncontroverted

testimony and find that Kloba, Multer, and Loughran teach each limitation of claim 7.

Claim 12 depends from claim 1 and recites that the remote computer server platform comprises

one or more transmitters configured to send at least one Short Message Service (SMS) message to at least one of the plurality of consumer device assets that causes one or more components of said asset to power up from a powered down state for facilitating the exchange of further communications between said asset and the remote computer server platform.

We find this limitation taught by Loughran's description of powering up mobile computing devices upon receipt from a server of an SMS message with an appropriate header. Ex. 1011 ¶¶ 38–40; Pet. 52–54. We credit Dr. Kesidis's uncontroverted testimony that a skilled artisan would have combined this teaching with the teachings of Kloba and Multer to enable the devices to include additional features, such as the ability to receive messages and perform software upgrades even when those devices are turned off. Ex. 1009 ¶¶ 313, 880–881; Pet. 52–54.

Claim 16 depends from claim 1 and recites “wherein at least one of the plurality of consumer device assets comprises a user identity card for accessing a cellular mobile telecommunications network.” Claim 17 depends from claim 16 and recites “wherein the user identity card is a Subscriber Identity Module (SIM) card.” For each of these claims, Dr. Kesidis testifies that devices in a GSM network must have a SIM card to communicate over the network. Ex. 1009 ¶¶ 316–317, 319, 883, 885. We credit this uncontroverted testimony and find that Kloba, Multer, and Loughran teach each limitation of claims 16 and 17.

Claim 20 is independent as noted above. It is in most material respects the same as claim 1. We find that Kloba and Multer teach the overlapping limitations. However, claim 20 recites a “first plurality of consumer device assets wirelessly connected to a cellular mobile telecommunications network” and a “second plurality of consumer device assets wirelessly connected to the Internet.”

As to these aspects of claim 20, Petitioner points to Figure 36 of Kloba, noting that it shows a server connected to a number of devices, including desktop computers and wireless devices. Pet. 56–57. Petitioner contends that Loughran’s description of GSM communications between a wireless device and a server teaches consumer device assets “wirelessly connected to a cellular mobile telecommunications network,” referring to its analysis for claim 3. Pet. 57; Ex. 1009 ¶¶ 327–331, 891–892. For the reasons given for claim 3, above, we find that a skilled artisan would have had reasons to combine Loughran’s teaching of GSM communications with the teachings of Kloba and Multer. We further find that Kloba’s description of mobile devices that operate in conjunction with the Internet teaches consumer device assets “wirelessly connected to the Internet.” Ex. 1015, 4:59–63; Pet. 57; Ex. 1009 ¶¶ 332–333, 891–892.

Claim 20 also differs from claim 1 in that it recites
one or more transmitters configured to send at least one Short Message Service (SMS) to at least one of the first plurality of consumer device assets that causes one or more components of said asset to power up from a powered down state for facilitating the exchange of further communications between said asset and the remote computer server platform.

As to this limitation, Petitioner points to its analysis of claim 12, discussed above. Pet. 58. For the reasons given for claim 12, above, we find that a

skilled artisan would have had reasons to combine Loughran's teaching of using SMS messages to turn on remote computing devices with the teachings of Kloba and Multer. Accordingly, we find that Kloba, Multer, and Loughran teach each limitation of claim 20.

Patent Owner's arguments as to claim 20 are presented with those for claim 1, and Patent Owner does not present separate arguments challenging Petitioner's allegations as to those aspects of claim 20 not overlapping with claim 1. PO Resp. 11, 17–18, 37, 47–48, 53; Sur-Reply 1, 6, 13–14.

Claims 22–30 depend, directly or indirectly, from claim 20. Claims 22–30 add limitations substantially the same as claims 5–11, 13, and 14 add to claim 1. Petitioner incorporates its analysis of claims 5–11, 13, and 14 for its analysis of claims 22–30. Pet. 58–59. For the same reasons as given above for claims 5–11, 13, and 14, the combination of Kloba, Multer, and Loughran teaches each limitation of claims 22–30.

c. Conclusion of Obviousness

As explained above, the combination of Kloba, Multer, and Loughran teaches each limitation of claims 3, 7, 12, 16–18, 20, and 22–30. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Kloba, Multer, and Loughran. Patent Owner does not introduce or argue objective indicia of nonobviousness. Patent Owner also does not present separate argument for claims 3, 7, 12, 16–18, 20, and 22–30. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that the subject matter of claims 3, 7, 12, 16–18, 20, and 22–30 would have been obvious over Kloba, Multer, and Loughran.

4. Alleged Obviousness of Claims 19 and 21 over Kloba, Multer, Loughran, and Chow

Petitioner contends that the subject matter of claims 19 and 21 would have been obvious over Kloba, Multer, Loughran, and Chow. Pet. 59–64. For the reasons given below, we agree with Petitioner.

a. Scope and Content of the Prior Art—Overview of Chow

Chow

implements a network-centric service distribution architecture that integrates a wireless access system/service in the residence, SOHO [Small Office Home Office], business or public environment through the use of a local broadband network (i.e., Residential/Business Broadband Network—RBN) to the service provider’s broadband transport network and to a service provider’s broadband packet network.

Ex. 1012 ¶ 11. According to Chow, “[t]he invention extends the scheme of wired Virtual Private Networks (VPNs) to include duplicate wireless elements in home and office.” *Id.* ¶ 2.

Chow states that “[t]hree key wireless access technologies/standards, TIA/EIA-136, General Packet Radio Service (GPRS)/Enhanced Data for Global Evolution (EDGE), and IEEE 802.11b Wireless LAN, are used to define basic residential and/or small business services,” but notes that “these standards are for illustrative purposes only and any practices that are based on differences or variations of given home or small business network apparatuses and/or broadband network access to the home and/or small business environments and/or wireless protocols shall be within the scope of the invention,” and gives the example of Wideband CDMA (WCDMA). *Id.* ¶ 30. Chow also explains that “[a]nother instantiation of the [Access

Port] can be to support a high-speed wireless data access via the IEEE 802.11b wireless LAN standard.” *Id.* ¶ 95.

b. Differences Between Claims 19 and 21 and the Prior Art; Reasons to Modify or Combine

Claim 19 depends from claim 18 and adds

wherein the wireless connection between at least one of the plurality of consumer device assets and the cellular mobile telecommunications network complies with Wideband Code Division Multiple Access (WCDMA) air interface standards, and wherein the wireless connection between at least another of the plurality of consumer device assets and the Internet complies with Wireless Local Area Network (WLAN) implementation standards.

Claim 21 depends from claim 20 and adds a similar limitation.

As to “the cellular mobile telecommunications network complies with Wideband Code Division Multiple Access (WCDMA) air interface standards,” Petitioner contends that “[i]t would have been obvious for a [person of ordinary skill in the art] to incorporate Chow’s WCDMA network into the network of the Kloba-Multer-Loughran system.” Pet. 61–62 (citing Ex. 1012 ¶ 30). We credit Dr. Kesidis’s uncontroverted testimony that Chow provides “complementary disclosure” and “additional detail” of networks that could be used with such a system. Ex. 1009 ¶¶ 371, 938; Pet. 60–61. We also credit Dr. Kesidis’s uncontroverted testimony that a skilled artisan would have “gravitated toward the most recent and advanced communication protocols available at the time,” and would have looked to Chow for “the newer and more advanced wireless communications technologies.” Ex. 1009 ¶¶ 371, 938. Accordingly, we find that Chow teaches this limitation of claims 19 and 21 and that a skilled artisan would

have had reasons to combine the teachings of Chow with those of Kloba, Multer, and Loughran in the manner claimed.

As to “wherein the wireless connection between at least another of the plurality of consumer device assets and the Internet complies with Wireless Local Area Network (WLAN) implementation standards,” we find that Chow describes using the IEEE 802.11b wireless LAN standard to enable high-speed Internet access. Pet. 63–64 (citing Ex. 1012 ¶ 95). We credit Dr. Kesidis’s uncontroverted testimony that a skilled artisan “would have recognized the value of improving user experience by incorporating the services that Chow states are enabled by IEEE 802.11b,” including by adding features such as file sharing, peripheral sharing, and simultaneous Internet access, as described in Chow. Ex. 1009 ¶¶ 381, 943 (citing Ex. 1012 ¶ 95). Accordingly, we find that Chow teaches this limitation of claims 19 and 21 as well.

c. Conclusion of Obviousness

As explained above, the combination of Kloba, Multer, Loughran, and Chow teaches each limitation of claims 19 and 21. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Kloba, Multer, Loughran, and Chow. Patent Owner does not introduce or argue objective indicia of nonobviousness. Patent Owner also does not present separate argument for claims 19 and 21. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that the subject matter of claims 19 and 21 would have been obvious over Kloba, Multer, Loughran, and Chow.

5. Alleged Obviousness of Claim 4 over Kloba, Multer, and Chow

Claim 4 depends from claim 1 and adds “wherein communications between at least one of the plurality of consumer device assets and the remote computer server platform traverse a Virtual Private Network (VPN).” We find that this is shown by Chow’s description of using a VPN. Pet. 64–66 (citing Ex. 1012 ¶ 2). We credit Dr. Kesidis’s uncontroverted testimony that a skilled artisan would have appreciated that incorporating a VPN into the system of Kloba and Multer would have given users the ability to use their mobile devices to access home and office network resources remotely. Ex. 1009 ¶¶ 387, 947. Accordingly, we find that a skilled artisan would have had persuasive reasons to incorporate Chow’s VPN into the system of Kloba and Multer.

As explained above, the combination of Kloba, Multer, and Chow teaches each limitation of claim 4. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Kloba, Multer, and Chow. Patent Owner does not introduce or argue objective indicia of nonobviousness. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that the subject matter of claim 4 would have been obvious over Kloba, Multer, and Chow.

6. Alleged Obviousness of Claim 15 over Kloba, Multer, and Fong

Petitioner contends that the subject matter of claim 15 would have been obvious over Kloba, Multer, and Fong. Pet. 66–67. For the reasons given below, we agree with Petitioner.

a. Scope and Content of the Prior Art—Overview of Fong

Fong describes “a main server including software for managing network resources from a single point of administration, wirelessly connecting a plurality of electronic devices to the main server to create a wireless local area network (LAN), and managing the electronic devices using the software.” Ex. 1017, Abstract. In Fong’s system, “the main server 200 monitors the management initiating parameters of all electronic devices 202–212 connected to the wireless LAN.” *Id.* at 9:49–51. In one example,

if the main server 200 is set up to monitor the battery power of mobile terminals 208 and 212 and send a message to all terminals indicating that a particular terminal battery must be charged, the management initiating parameter is the battery power and the action is sending a message to all terminals on the wireless network.

Id. at 10:10–16.

b. Differences Between Claim 15 and the Prior Art; Reasons to Modify or Combine

Claim 15 depends from claim 1 and adds “wherein the operational status information communicated by the plurality of consumer device assets to the remote computer server platform comprises data indicative of battery charge levels.” Petitioner argues that a skilled artisan would have incorporated Fong’s teaching of a server monitoring battery charge levels of electronic devices into the system of Kloba and Multer. Pet. 66–67. We credit the uncontroverted testimony of Dr. Kesidis that a skilled artisan would have made this combination to inform users that their devices’ batteries need to be charged, to ensure that devices have sufficient power

before beginning a synchronization, to keep their devices from running out of power while downloading content, and to keep the devices from draining too much power as a result of synchronization. Ex. 1009 ¶¶ 393, 949.

Accordingly, we find that Fong teaches the additional limitation of claim 15 and that a skilled artisan would have had persuasive reasons for combining the teachings of Fong with those of Kloba and Multer to arrive at the claimed subject matter.

c. Conclusion of Obviousness

As explained above, the combination of Kloba, Multer, and Fong teaches each limitation of claim 15. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Kloba, Multer, and Fong. Patent Owner does not introduce or argue objective indicia of nonobviousness. Patent Owner also does not present separate argument for claim 15. In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence that the subject matter of claim 15 would have been obvious over Kloba, Multer, and Fong.

III.CONCLUSION

Petitioner has proved by a preponderance of the evidence that claims 1–30 of the '359 patent are unpatentable.

IV. ORDER

For the reasons given, it is

ORDERED, based on a preponderance of the evidence, that claims 1–30 of the '359 patent are unpatentable; and

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

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