

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HM ELECTRONICS, INC.,
Petitioner,

v.

3M INNOVATIVE PROPERTIES COMPANY,
Patent Owner.

Case IPR2015-00491
Patent 8,694,040 B2

Before JAMES P. CALVE, RICHARD E. RICE, and DAVID C. McKONE,
Administrative Patent Judges.

CALVE, *Administrative Patent Judge.*

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

I. BACKGROUND

Petitioner HM Electronics, Inc. (“HME”) filed a Petition (Paper 3, “Pet.”) seeking *inter partes* review of claims 1–13, 15–28, and 30–32 of U.S. Patent No. 8,694,040 B2 (Ex. 1001, “the ’040 patent”). Patent Owner 3M Innovative Properties Company (“3M”) filed a Preliminary Response. Paper 13 (“Prelim. Resp.”). Based on these submissions, we instituted trial as to claims 1–13, 15–28, and 30–32 of the ’040 patent. Paper 14 (“Dec. on Inst.”), 13–14. After our Institution Decision, 3M filed a Response. Paper 17 (“PO Resp.”). HME filed a Reply. Paper 22 (“Pet. Reply”).

An oral argument was conducted on March 10, 2016. A transcript of the argument is entered in the record. Paper 34 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a).

A. *Related Proceedings*

The parties identify the following proceeding as affecting or being affected by a decision in this proceeding: *3M Company and 3M Innovative Properties Company v. HM Electronics, Inc.*, No. 14-cv-01000 (D. Minn.). Pet. 2; Paper 5, 1–2. The ’040 patent also is the subject of an *inter partes* review in IPR2015-00482.

B. *The ’040 Patent (Ex. 1001)*

The ’040 patent discloses a wireless intercom system for commercial establishments, particularly quick service restaurants. Ex. 1001, 1:15–17, 21–37. Intercom system 12 includes base station 14, which communicates wirelessly with a plurality of headsets 16a, 16b, 16n worn by personnel or staff of establishment 10. *Id.* at 5:21–25. Figure 1, which is reproduced below, illustrates this arrangement.

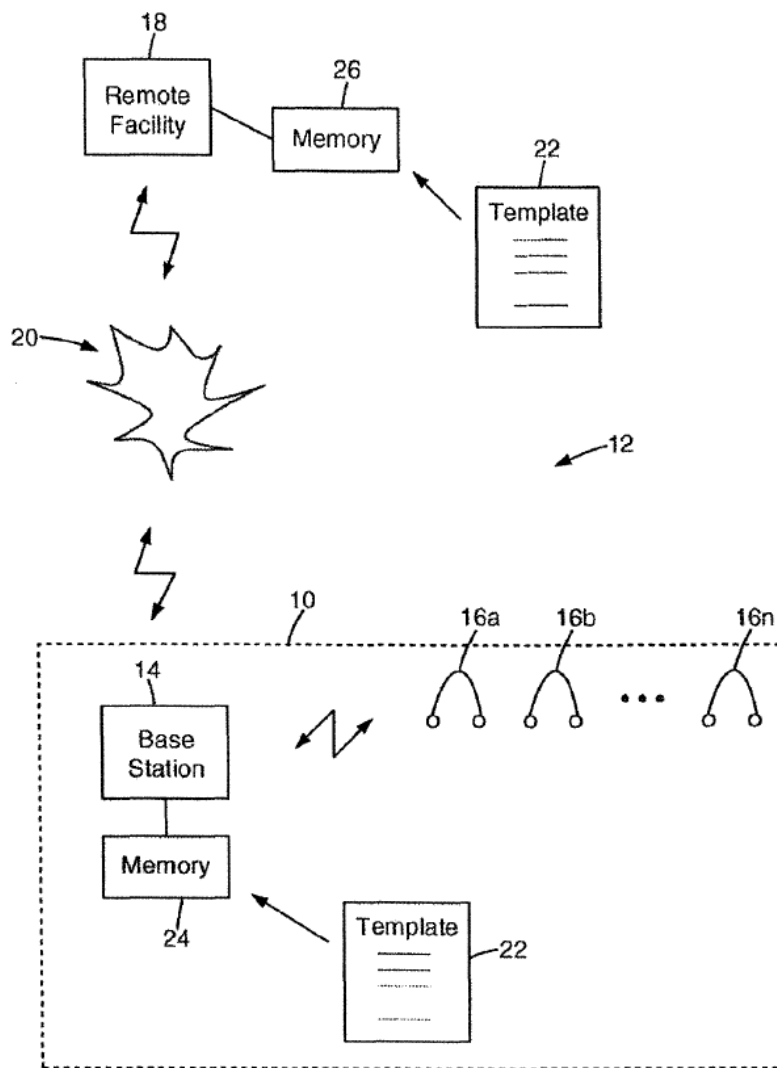


Fig. 1

Figure 1 is a block diagram of an intercom system. Headsets 16a, 16b, 16n can be in full duplex communication with base station 14 with separate volume or gain controls available for each headset and direction of communication. *Id.* at 5:38–44. Other adjustable parameters include receive and transmit volume, master volume for a main speaker of a drive-through facility, individual volume for each channel, and base station receive and base station transmit volume. *Id.* at 5:44–52, 6:15–50. A set of parameters may form template 22 stored locally or remotely for recall. *Id.* at 6:51–7:22.

To facilitate resolution of technical problems, intercom system 12 allows personnel at establishment 10 to call a technical service facility 18 that is located remotely from establishment 10. *Id.* at 6:12–14. Technical service facility 18 can access parameters controlling intercom system 12 remotely via wide area network 20 and review and adjust the parameters to place intercom system 12 back into operation or improve operation without sending a service technician to establishment 10. *Id.* at 6:15–25.

The '040 patent claims priority as a continuation from application No. 11/276,048, filed on February 10, 2006. Ex. 1001, 1:8–10. 3M asserts that the '040 patent thus has a 2006 priority date. PO Resp. 46; Ex. 2003 ¶ 11.

C. Illustrative Claim

Claims 1 and 18 are independent. Claim 1 is reproduced below.

1. An intercom system, said intercom system being configurable for a drive-through, quick service restaurant establishment having a staff, comprising:
 - a base station having the ability to connect to a wide area communication network;
 - at least one headset configured for two-way wireless communication with said base station;
 - said wireless communication between the at least one headset and said base station being configurable with at least one parameter that adjusts a volume level of communications wirelessly received or wirelessly transmitted by the headset;
 - said at least one parameter being locally adjustable at the establishment;
 - said base station being configured to permit remote review and remote adjustment of said at least one parameter from a facility remote from the location of the establishment when said base station is connected to said wide area communication network; and
 - wherein said at least one parameter can be saved into a template of parameters for later use.

D. Prior Art

HME relies on the following references:

Reference	Printed Publication	Date	Exhibit
Gosieski	US 2005/0113136 A1	May 26, 2005	1008
HME Wireless 6000	<i>Wireless 6000 Wireless Drive-Thru Audio System, Installation Instruction</i> , © HM Electronics, Inc.	Aug. 2003	1010
3M Wireless	<i>3M Wireless Intercom System Service Information</i> , 3M, Food Services Trade Dep't, © 3M	Mar. 2003	1011
Telex RadioCom	<i>Telex Operating Instructions, RadioCom™ BTR-800, TR-800 Professional Wireless Intercom System</i> , Telex Communications, Inc.	June 2002	1013

E. Asserted Grounds of Unpatentability

We instituted trial regarding the patentability of claims 1–13, 15–28, and 30–32 of the '040 patent on the following grounds. Dec. on Inst. 13–14.

References	Basis	Claims Challenged
Gosieski, HME Wireless 6000	§ 103	1–13, 15–28, 30–32
Gosieski, 3M Wireless	§ 103	1–5, 9–13, 15–21, 24–28, 30–32
Gosieski, 3M Wireless, Telex RadioCom	§ 103	6–8, 22–24

II. ANALYSIS

A. *Claim Interpretation*

In an *inter partes* review, claims of an unexpired patent are given their broadest reasonable construction in light of the specification in which they appear. *See In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–1279 (Fed. Cir. 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation”), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016); 37 C.F.R. § 42.100(b). Claim terms are given their ordinary, customary meaning as understood by a skilled artisan in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In instituting trial, we determined that it was not necessary to interpret any claim limitations to reach our decision. Dec. on Inst. 4. Based on the submissions of the parties and their respective positions, we determine that it is necessary to construe the following claim terms.

1. “remote” (claims 1, 18)

HME asserts that the broadest reasonable interpretation of “remote” is “not in the immediate vicinity, and accessible through a wide area network.” Pet. 10; Pet. Reply 3–4. 3M argues that HME’s interpretation of “remote” is incorrect because it does not capture the limitations in claims 1 and 18 that (1) remote review and remote adjustment occurs from a facility remote from the location of the establishment, (2) the base station is configured to permit remote review and remote adjustment of said at least one parameter, and (3) for remote review and adjustment, the base station is connected to said wide area communication network. PO Resp. 14–15; Ex. 2003 ¶¶ 29–30.

We interpret “remote” to mean “not at the site of.” This interpretation is consistent with an ordinary meaning of “remote,” which includes “[n]ot in the immediate vicinity, as a computer or other device located in another place (room, building, or city) and accessible through some type of cable or communications link.” See Pet. 9–10 (quoting MICROSOFT COMPUTER DICTIONARY (5th ed. 2002) (Ex. 1006 at APP2787)).

Our interpretation also is consistent with the ’040 patent specification, which discloses that the present invention “allow[s] the intercom system of an establishment to be remotely adjusted by a technician or other user without the need for such technician or other user to be dispatched to the establishment itself, saving both a considerable amount of both time and money.” Ex. 1001, 2:33–37; 6:15–20. A service technician can access the intercom system remotely via a wide area network 20 such as the Internet “from great distances” (*id.* at 2:38–41), but the main advantage of the remote accessibility is that a technician may resolve an issue with intercom system 12 quickly, without traveling to the site of establishment 10 (*id.* at 6:26–38).

The ’040 patent specification also discloses that a location from which remote review and adjustment occurs can be a great distance away from the location of the quick service restaurant so a technician would have to fly or travel many hours, or even a day, to reach an establishment 10. *Id.* at 6:26–32. The ’040 patent refers to the location of the restaurant establishment 10 as “remote” from the technician. *Id.* The ’040 patent specification also discloses that the use of the Internet permits a technician or other user to access the intercom system from “great distances” and review and adjust parameters of the intercom system. *Id.* at 2:38–41; *see also* Tr. 33:18–35:7 (“remote” means away from the location of the establishment).

In addition to using the term “remote” to refer to locations that are a great distance from the site of establishment 10, the ’040 patent specification uses the term “remote” to encompass remote adjustments by a service technician who does not have to make a site visit, i.e., a technician who is located other than at the site of the quick service restaurant establishment 10.

In this regard, the ’040 patent specification further discloses:

If the site of establishment 10 is remote, many hours of establishment down time may be saved, perhaps even a day if it is necessary to fly or otherwise transport a service technician to a very remote site. Even if the site of establishment is *not remote*, a service technician may be able to service many more establishments and solve many more issues more efficiently by making *remote adjustments* than by incurring site visits. Remote adjustment of parameters of intercom system 12 may minimize, or eliminate altogether, service interruption by establishment 10.

Id. at 6:28–38 (emphasis added). “Remote” adjustments can be made from any location that is not at the site of the restaurant to reduce down time that normally occurs if a technician has to travel to the site of the restaurant. *Id.*

Thus, the ’040 patent specification uses “remote” to encompass not only a service technician at remote facility 18 that is located a great distance from establishment 10, but also any other location that is away from the site of establishment 10. For example, the summary of the invention indicates that the intercom system can be “remotely adjusted” by a technician or other user so the technician or user does not have to travel to the establishment. *Id.* at 2:33–36. Thus, a key consideration in remote adjustment capability is the ability to review and adjust intercom system parameters without having to visit the site of a quick service restaurant. Remote adjustment thus occurs anywhere other than at the site of the quick service restaurant establishment.

This interpretation becomes clearer when considered in the overall context of the '040 patent specification disclosure, which discloses that an advantage of remote adjustment capability is to reduce the loss of business and revenue that may occur from an inoperable intercom system.

The drive-through ordering system is vitally important for a quick service restaurant. In some quick service restaurants, the drive-through is sixty percent (60%) or more of the revenue of the establishment. Thus, there is a great need for a reliable intercom system for use, for example, in obtaining orders from the drive-through facility. If the intercom system develops a fault, becomes mal-adjusted or otherwise mal-functions, the establishment may be unable to process orders from the drive-through facility not only preventing the establishment from booking the revenue which otherwise would have been obtained but also potentially alienating customers.

Id. at 1:54–64.

The remote adjustment capability of the intercom system reduces the amount of time an intercom system is inoperable by allowing a technician who is “remote” from establishment 10 to adjust the system. This benefit accrues whether the technician is “remote” by a great distance or “remote” at a closer location that still is not at the site of the quick service restaurant. A site visit is required in both scenarios to restore the intercom system, and down time occurs until a technician visits the site and fixes the intercom.

For a technician located a significant distance geographically from the location of a quick service restaurant, remote adjustment saves “considerable amount of time for such service technician, once summoned, to arrive at the location of establishment 10 in order to begin repairs.” *Id.* at 6:1–5. Remote adjustment saves many hours of down time at establishment 10, even a day if it is necessary to fly a technician to a very remote site. *Id.* at 6:26–32.

The '040 patent specification discloses that similar advantages accrue for a service technician who is not located a great distance “remote” from a quick service restaurant establishment 10, but still is not on-site. Thus,

Even if establishment 10 is not located a significant distance from a qualified service technician, sending a service technician on-site to perform a repair can still be a significant expense in terms of both time and money.

Id. at 6:7–10. When a service technician is nearby, but not at the site of quick service restaurant establishment 10, the '040 patent specification discloses that a “remote adjustment” still is made and remote adjustments in this context allow a service technician “to service many more establishments and solve many more issues more efficiently by making remote adjustments than by incurring site visits.” *Id.* at 6:32–35. Remote adjustment addresses the need to save time and money for repairs in both cases. *Id.* at 2:13–29.

Our interpretation of “remote” also is consistent with the '040 patent specification’s use of the term “local” to mean on-site at establishment 10. The '040 patent specification contrasts “local” with “remote” such that a parameter is adjusted *locally* when it is adjusted on-site at establishment 10, and *remotely* when it is adjusted from a location away from the site of the establishment 10. *Id.* at 4:3–17 and 43–48, 8:21–24; *see* Pet. 9–11.

Our interpretation also is consistent with claims 1 and 18. We reject the parties’ positions that the definition should include “accessible through a wide area network” (Pet. 10) or limitations recited in claims 1 and 18 (PO Resp. 14–15). Including other claimed features in a definition of “remote” would render the recital of these claim features superfluous. *See Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (denouncing claim constructions that render phrases in claims superfluous).

These other limitations—“remote review,” “remote adjustment,” “a facility remote from the location of the establishment,”—also support our interpretation of “remote” to mean “not at the site of.” Thus, *remote* review and adjustment are provided “from a facility *remote* from the location of the establishment,” i.e., not at the site of the quick service restaurant, when the base station is connected to a WAN. Parameters also are “*locally* adjustable at the establishment,” i.e., at the site of the establishment, in claims 1 and 18.

3M’s expert, Mr. Gafford, testifies that “remote” is a location “remote from the drive-through, quick service restaurant establishment.” Ex. 2003 ¶ 30. Mr. Gafford testifies that this meaning follows from the ’040 patent’s disclosure that maintenance costs are controlled by allowing adjustment without having to travel to the establishment. *Id.*

Our interpretation is consistent with the interpretation of “remote” in Appeal 2015-004783 of Reexamination Control 95/002,239 for Patent No. US 8,005,455, which issued from a parent application of the ’040 patent, and from which the ’040 patent claims priority as a continuation. Ex. 1017, 6–9.

2. “a base station having the ability to connect
to a wide area communication network” (claims 1, 18)

HME asserts that “a base station having the ability to connect to a wide area communication network” means “able to be communicatively joined to a wide area network.” Pet. 12. 3M argues that this limitation must be interpreted with other limitations in claims 1 and 18 such as “said base station configured to permit remote review and remote adjustment” . . . when said base station is connected to said wide area communication network.” PO Resp. 15–16. 3M argues that these limitations require the base station to have a necessary hardware and software configuration. *Id.*; Ex. 2003 ¶ 32.

We interpret “a base station having the ability to connect to a wide area communication network” to mean “able to be communicatively joined to a wide area network.” This interpretation is consistent with an ordinary meaning of “ability,” which is “[t]he quality of being able to do something [t]he quality of being suitable for or receptive to a specified treatment; capacity.” Pet. 12 (quoting THE AMERICAN HERITAGE COLLEGE DICTIONARY (4th Ed. 2002) (Ex. 1007, APP2791)). An ordinary meaning of “connect” includes “[t]o join to or by means of a communication circuit.” *Id.* (quoting Ex. 1007, APP2792).

This interpretation is consistent with the language of claims 1 and 18, which recite “said base station being configured to permit remote review and remote adjustment of said at least one parameter” “when said base station is connected to said wide area communication network.” Ex. 1001, 9:39–43, 10:45–49; *see also* Pet. Reply 4. The base station’s ability to connect, i.e., to *communicate over*, a WAN allows remote review and remote adjustment of intercom system parameters, when the base station is connected to a WAN. Communication from a remote facility can be sent to the base station when the base station is connected to, i.e., in *communication with*, the WAN.

Claims 1 and 18 distinguish between “having the ability to connect” and “when said base station is connected.” We therefore decline to interpret “having the ability to connect” to mean “connected to the wide area communication network.” *See Dell Inc. v. Acceleron, LLC*, ___ F.3d ___, 2016 WL 1019075, *5 (Fed. Cir. Mar. 15, 2016) (meaning should be given to all claim terms); *Baran v. Med. Device Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010) (use of different terms implies different meanings unless evidence indicates patentee used terms interchangeably).

Our interpretation also is consistent with the '040 patent specification, which discloses a base station “*connectable* to a wide area communication network.” Ex. 1001, 2:49–50 and 59–60, 3:45–46 and 53–56, 4:39–42. The '040 patent specification also discloses that a plurality of parameters can be adjusted via the wide area network when the base station is “connected to a wide area network.” *Id.* at 4:8–10. Thus, the '040 patent specification does not use the terms “connectable” and “connected” interchangeably. The base station has the ability to connect to a WAN. When the base station is connected to a WAN, intercom system parameters can be adjusted remotely.

The prosecution history of the '040 patent supports this distinction and our interpretation of “a base station having the ability to connect to a wide area communication network” as “able to be communicatively joined to a wide area network.” Original claim 1 recited an intercom system for a drive-through quick service restaurant comprising a plurality of headsets, a base station, a speaker, and a microphone, “wherein the base station is connectable to a wide area communication network in order to enable remote adjustment of the plurality of parameters.” Ex. 1002, APP0391.

In response to an Office Action rejecting claims 1–5, 10–12, 17–20, and 25–27 under 35 U.S.C. § 103(a), 3M cancelled original claims 1–45 and submitted new claims 46–75. *See id.* at APP0319–APP0326 (Office Action, dated Sept. 4, 2012), APP0300–APP0305 (Amendment cancelling claims 1–45 and adding new claims 46–75). New independent claims 46 and 62 both recited “a base station *connectable* to a wide area communication network” and “remote review and adjustment of said at least one parameter when said base station is connected to said wide area communication network.” *Id.* at APP0301, APP0303, APP0306–APP0307.

The Examiner then rejected finally claims 46–75 on the grounds of obviousness-type double patenting but indicated that claims 46–75 would be allowable if they were amended to overcome the double patenting rejection. *Id.* at APP0266–APP0267. 3M filed a terminal disclaimer on May 10, 2013, and the Examiner issued a Notice of Allowance on May 20, 2013. *Id.* at APP0256–APP0259, APP0242–APP0246.

Subsequently, 3M filed an Amendment & Request for Continued Examination on August 20, 2013. *Id.* at APP0074–APP0081. In that paper, 3M presented the following amendments to claims 46 and 62:

“a base station **having the ability to connect** ~~connectable~~ to a wide area communication network;”

“permit remote review and remote adjustment of said at least one parameter **from a facility remote from the location of the establishment** when said base station is connected to said wide area communication network;”

Ex. 1002, APP0075, APP0077.

In the remarks that accompanied this amendment, 3M emphasized that Applicants’ intent is not to change the claim scope with this amendment. Applicants assert that the word “connectable,” by itself, refers to the ability to connect. But this addition is made to further make clear that this is what the Applicant intends the claim to require. Applicants note that claims 46 and 62 do not require that the base station is actually connected to a wide area network, but that the base station has the ability to connect, in other words is connectable, to a wide area network.

Id. at APP0080.

3M clearly and unambiguously indicated that “having the ability to connect” in claims 46 and 62 (renumbered as claims 1 and 18, *see id.* at APP0054, APP0063) means “connectable” rather than connected to a WAN.

3M does not identify any disclosure in the '040 patent specification of any software or hardware that gives base station 14 the ability to connect to a WAN. *See* PO Resp. 15–16. Instead, 3M cites Mr. Gafford's declaration, but Mr. Gafford states only that the base station must have the necessary hardware and software configuration without any citation to the '040 patent specification or any other authority. *See* Ex. 2003 ¶¶ 31–32.

We find no disclosure in the '040 patent specification of hardware or software that gives base station 14 an ability to connect to a WAN. Figure 1 illustrates base station 14 separated from wideband communication network 20.¹ An unnumbered lightning bolt is positioned between base station 14 and WAN 20, but the specification does not identify or discuss this element. Another lightning bolt is shown between base station 14 and headsets 16a–n. The '040 patent specification discloses only that base station 14 connects to headsets 16a–n via a wireless or a wired connection. Ex. 1001, 5:21–35. No disclosure is provided for any connection between base station 14 and WAN 20. It may be that base station 14 connects to WAN 20 by a wired or wireless local/LAN connection (lightning bolt) similar to headsets 16a–n. There is no disclosure whether base station 14 connects to WAN “directly” or indirectly via intermediary devices. Nor is there any disclosure of any software or software used to connect base station 14 and WAN 20, or base station 14 and headsets 16a–n. Mr. Gafford's testimony in reliance on “the teachings of the '040 patent” (Ex. 2003 ¶¶ 31, 34) thus is not persuasive.

¹ The drawings “must show every feature of the invention specified in the claims.” 37 C.F.R. § 1.83(a). Applicants must furnish a drawing where necessary for an understanding of the subject matter sought to be patented when that subject matter admits of illustration. *See* 37 C.F.R. § 1.81.

The '040 patent specification discloses only that the parameters of intercom system 12 can be accessed “remotely via a wide area network 20, such as by way of the internet.” Ex. 1001, 6:19–20. 3M and Mr. Gafford do not cite any other disclosure of WAN 20 to help a skilled artisan determine what hardware or software may be needed or used to communicate over WAN 20 or connect to WAN 20. PO Resp. 8–9; *see* Ex. 2003 ¶¶ 21–26, 23 (the technician may access the intercom system via the Internet); Ex. 1016, APP3257:18–APP3258:4 (testifying that no other disclosure is provided).

Even if the '040 patent specification disclosed a particular connection between base station 14 and WAN 20, we would not limit the claims to such an embodiment when the language of claims 1 and 18 is broader. Claims 1 and 18 do not require the base station to have an ability to connect *directly* to a wide area communication network. The base station merely needs to have the ability to connect to, i.e., *communicate over*, a WAN in some unspecified manner. There is no disclaimer in the specification of intermediate devices or limitation on the means by which base station 14 is connectable to WAN 20. 3M does not identify any such disclosure either. *See* PO Resp. 15–16.

Mr. Gafford testifies that skilled artisans would understand certain hardware and software must be present in base station 14 so it has an ability to connect to a WAN, but he identifies only TCP/IP for an Internet, and cites no support for this assertion. Ex. 2003 ¶¶ 31–32. We therefore accord little weight to his testimony, particularly in view of the silence of the '040 patent specification and claim language. *See* 37 C.F.R. § 52.65(a); *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (expert may explain terms of art and state of the art but cannot be used to prove the proper or legal construction of any instrument or writing).

3. “An intercom system . . . configurable for a drive-through, quick service [restaurant] establishment” (claims 1, 18)

3M argues that “[a]n intercom system . . . configurable for a drive-through, quick service restaurant establishment” in claim 1 and “a drive-through quick service establishment” in claim 18 is limiting because the preamble provides antecedent basis for “the establishment” recited in the body of claims 1 and 18. PO Resp. 52–55. 3M argues that the preamble is not a statement of intended use. *Id.* at 54–55. 3M argues that the preamble should be given weight, but does not indicate what scope or interpretation should be accorded to the preamble. *Id.* at 54–55; *see* Pet. Reply 15.

In view of 3M’s acknowledgement that the Wireless 6000 and 3M Wireless disclose intercom systems for quick-service restaurants, as recited in claims 1 and 18,² it is unnecessary to determine whether the preambles of claims 1 and 18 should be given patentable weight. The issue is whether the teachings of the Wireless 6000 and 3M Wireless are combinable with those of Gosieski to render obvious claims 1–13, 15–28, and 30–32, as discussed in more detail below in regards to each asserted ground of unpatentability.

4. “a template of parameters” (claims 1, 18)

HME argues that the limitation “a template of parameters” is “a plurality of parameters stored together as a group.” Pet. 14. 3M argues that

² 3M argues that the “HME Wireless 6000 discloses a wireless intercom system for use in a drive-through quick service restaurant establishment.” PO Resp. 22; Ex. 2003 ¶ 40. 3M also argues that “3M Wireless discloses a wireless intercom system for use in a drive-through quick service restaurant establishment.” PO Resp. 36; Ex. 2003 ¶ 43. 3M contends that the Petition ignores the important distinctions between a professional IEM system such as Gosieski and “wireless intercoms for quick service restaurants, such as HME Wireless 6000 and 3M Wireless.” PO Resp. 42.

this phrase means “a plurality of parameters that can be stored and used to restore the intercom system to a working configuration.” PO Resp. 17.

We interpret “a template of parameters” to mean “a group of intercom system settings that control operation of the intercom system and can be saved together in a file.” This meaning is consistent with the ’040 patent specification, which discloses that the operation of intercom system 12 is governed by several parameters including a transmit or receive audio level (volume) for each headset 16a–n as well as separate volume or gain controls for each direction of communication. Ex. 1001, 5:36–44. The ’040 patent specification discloses that:

Many other parameters are also possible, such as lane assignment, receive volume, transmit 45 volume, master volume for a speaker associated with the drive-through facility, individual volume for each channel received by the drive-through facility, base station receive volume, base station transmit volume, page, greeter, vehicle detection alert, vehicle approaching alert, for examples. Many, if not all, of these parameters may be available to one or more staff members for individual adjustment.

Id. at 5:44–52.

Because multiple parameters may be used to set up, adjust, and balance intercom system 12, multiple parameters may be formed into sets of parameters. *Id.* at 6:51–55. “A given set of parameters for intercom system 12 may form a template 22, i.e., a set of parameters for intercom system 12 that, when implemented, will give rise to a particular operational characteristic for intercom system 12.” *Id.* at 6:55–59. Template 22 may be saved or stored for later recall to memory 24 that is local to establishment 10 or be saved remotely from establishment 10 in memory 26. *Id.* at 7:1–52.

Our interpretation also is consistent with the claims. Claim 1 recites that “at least one parameter can be saved into a template of parameters for later use.” Claim 18 recites that “at least one parameter for each of said plurality of headsets is grouped into a template of parameters that can be saved for later use.” Claims 4 and 20 depend, respectively, from claims 1 and 18 and recite “said template of parameters can be saved locally at the establishment.” Claims 5 and 20 depend from claims 1 and 18, respectively, and recite “said template of parameters can be saved to a location remote from the establishment.” Thus, one or more parameters can be grouped into a template of parameters and saved for a later *unspecified* use. *See* claim 2.

We decline to require a template of parameters to be “used to restore the intercom system to a working configuration” as 3M argues. PO Resp. 14. Claims 1 and 18 do not recite any particular “later use” of the template of parameters. The ’040 patent specification discloses that a template of parameters can be used to reset the intercom system, to change operational parameters, or to set up an intercom system initially and make it operational at a new location or new establishment. Ex. 1001, 7:1–49, 8:17–25, 42–61.

Claims 8 and 24 already recite that “said template of parameters is configured for recall to reset the system.” We, therefore, do not interpret “a template of parameters” in claims 1 and 18 to include a feature that is recited in dependent claims 8 and 24. *See Enzo Biochem Inc. v. Applera Corp.*, 780 F.3d 1149, 1156–57 (Fed. Cir. 2015) (independent claim should not be construed to require a limitation added by a dependent claim) (citations omitted); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) (claim differentiation is at its strongest where a limitation sought to be read into an independent claim already appears in a dependent claim).

B. Asserted Grounds of Unpatentability

*1. Obviousness of Claims 1–13, 15–28, and 30–32
Over Gosieski and HME Wireless 6000*

a. Overview of Gosieski (Ex. 1008)

Gosieski discloses a bi-directional, full duplex, digital communication system with a wireless microphone system and in-ear monitoring (“IEM”) system for real-time monitoring. Ex. 1008 ¶¶ 2, 17. System 10 includes input device 12, client 14, access point 16, network interface 18, control surface 20, in-ear monitoring (“IEM”) ear apparatus 22, and output elements 24. *Id.* ¶ 32. Input device 12 can be a microphone, still or video camera, instrument pickup, or other device that receives audio or visual data. *Id.*

Figure 1, reproduced below, illustrates one embodiment. *Id.* ¶ 27.

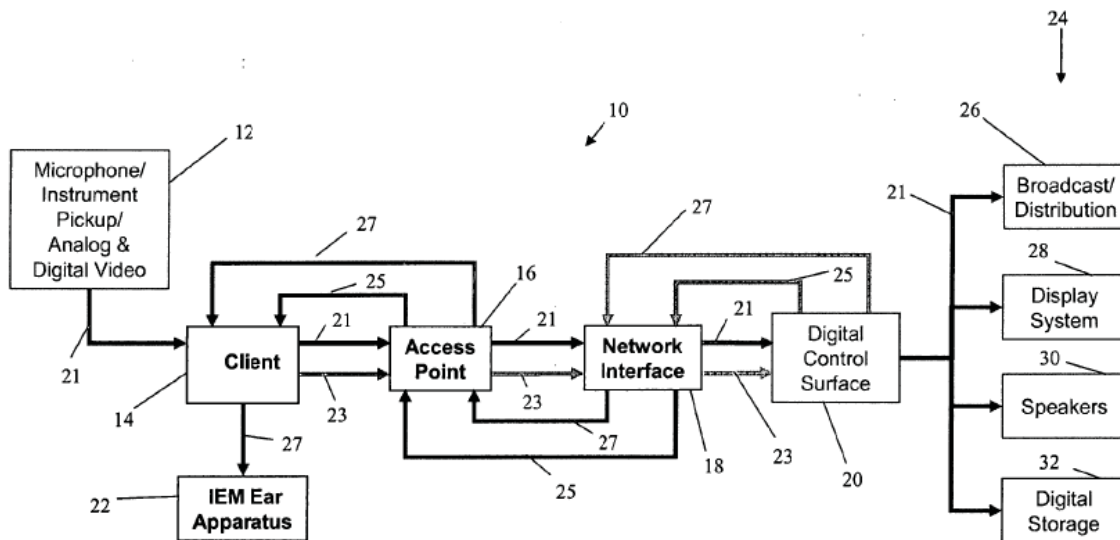


FIG. 1

Figure 1 is a signal diagram of one embodiment. *Id.*

Gosieski discloses that the invention integrates wireless audio, visual, and IEM systems into a single communication system with one base station

and many transceivers. *Id.* ¶ 17. Control surface 20 disseminates incoming signals to channels designated by an engineer and an audio engineer has the ability to blend incoming signals into individualized IEM signals for each performer. *Id.* ¶ 35. Signals received by a base station(s) can be routed to a digital console where signals can be blended into an IEM mix that is routed back to the base station and transmitted to each IEM ear apparatus that is worn by a performer or other person. *Id.* ¶ 51. Thus, persons connected to the system can communicate with one another, as an intercom. *See id.* ¶ 17.

Wireless communication between the headsets and the base station is configurable with at least one parameter that is adjustable locally on the base station's front panel display and controls. *Id.* ¶ 50. The system parameter settings can be stored and grouped in access point 16 and recalled. *Id.* ¶ 42.

Gosieski teaches that the use of its inventive features can be extended beyond the audio industry for other uses that might employ a bi-directional communication system through the use of an IEM earpiece with integrated headset microphone that can operate over a standard wireless LAN protocol like 802.11 series and 802.16. *Id.* ¶ 79. Other bi-directional communication system uses include use as a digital walkie-talkie or as a digital hands-free headset for an office, call center, manufacturing, military, construction, and search and rescue environments. *Id.* The IEM earpiece and integrated headset microphone also can be used as a hands-free VoIP telephone that interfaces with a business's WAN, LAN, and VoIP system. *Id.*

Gosieski discloses that the IEM system provides remote management capability that can monitor and adjust transceivers, a base station, and other components using a computer with system management software. *Id.* ¶ 17. This capability extends over a LAN, WAN, or the Web. *Id.* ¶¶ 50, 79, 80.

Thus, the parameters associated with audio and visual inputs can be adjusted remotely, as opposed to physical, in-person adjustment by an engineer. *Id.* ¶¶ 35, 41. Base station 16 can connect to the outside world and act as a server for web-based content and control, and to provide a web-based command, control, and system monitoring for engineers. *Id.* ¶ 80.

b. Overview of HME Wireless 6000 (Ex. 1010)

The Wireless 6000 Wireless Drive-Thru Audio System (Wireless 6000”) discloses a wireless audio system for use at quick-service restaurants. Ex. 1010, APP2861; PO Resp. 22. The system includes a vehicle detector board that signals when vehicles enter a drive-through area. *Id.* at APP2861, 2878, 2880. The system also controls outbound audio levels at an outside speaker and inbound levels from a speaker microphone. *Id.* at APP2862.

c. Analysis

Whether an invention would have been obvious is a legal question based on underlying findings of fact, including (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness.³ See *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *In re Gartside*, 203 F.3d 1305, 1319 (Fed. Cir. 2000).

Level of Ordinary Skill in the Art

HME asserts that a skilled artisan in the art in the field of the ’040 patent in the 2006 time frame would have had a bachelor of science in either electrical engineering or computer science and between five and ten years’ experience in designing intercom systems. Pet. 8 (citing Ex. 1005 ¶ 10).

³ 3M does not assert any objective indicia. See PO Resp. ii–iv, 1–58.

3M does not identify a level of ordinary skill in the art. *See* PO Resp. 41–46; Pet. Reply 2. Mr. Gafford testifies that a skilled artisan would have had a bachelor’s degree in electrical, computer, or information technology-based engineering and at least one-to-two years of experience in developing, designing, implementing, or analyzing audio/telecommunication equipment and digital control systems. Ex. 2003 ¶ 13. Mr. Gafford also testifies that a skilled artisan could have had less formal education with more experience in developing, designing, implementing, or analyzing audio/telecommunication equipment and digital control systems. *Id.*

We agree with HME’s contention and adopt it as the level of ordinary skill in the art. We find persuasive Mr. Hoeptner’s testimony that at least five years of experience was desirable based on his actual experience in designing and developing professional audio and quick service restaurant intercom systems. Ex. 1005 ¶¶ 1, 5, 8–10. In contrast, Mr. Gafford lacks experience designing intercom systems and relies on his experience as a litigation consultant and patron of quick service restaurants. *See* Ex. 1016, APP3217:17–APP3220:25; Ex. 2003 ¶¶ 4–10, 12.

HME’s Contentions of Unpatentability

HME contends that claims 1–13, 15–28, and 30–32 would have been obvious over Gosieski and HME Wireless 6000. Pet. 16. HME sets forth in the Petition with detailed claim charts and other contentions where Gosieski and the Wireless 6000 disclose each limitation of claims 1–13, 15–28, and 30–32. Pet. 16–19, 22–35. HME also provides reasons for combining the teachings of Gosieski and the Wireless 6000 to render obvious the subject matter of claims 1–13, 15–28, and 30–32. *Id.* at 19–21.

Obviousness of Claims 1 and 18

Regarding independent claims 1 and 18, HME asserts that Gosieski teaches an intercom system configured for bi-directional, full duplex, digital communications with a wireless microphone and in-ear monitoring (“IEM”) system with integrated headset that can operate using standard wireless LAN protocols in a wide variety of environments including digital walkie-talkie, digital hands-free headset for the office, call center, military, manufacturing, construction, or search and rescue, and a hands-free VoIP telephone that interfaces with a business’s WAN/LAN and VoIP systems. Pet. 16–17, (citing Ex. 1008 ¶¶ 2, 79), 22 (citing Ex. 1008 ¶¶ 2, 79), 30 (same), 30–31.

HME asserts that Gosieski discloses a base station with the ability to connect to a local area network (“LAN”) and a wide area network (“WAN”) like the Internet or World Wide Web and communicate wirelessly with at least one headset configured for two-way wireless communication with the base station and configurable with a parameter to adjust a volume level of the communication received and transmitted by the headset(s) where the parameter is adjustable locally at the establishment. *Id.* at 16–17 (citing Ex. 1008 ¶¶ 2, 50, 79), 22–24 (citing Ex. 1008 ¶¶ 41, 46, 62, 72, 79, 80), 31.

HME also asserts that Gosieski discloses a base station configured to permit remote review and adjustment of intercom parameters by operating as a local server to provide web based command and control, and a system monitoring facility for an engineer where the parameters for each headset can be saved into a template for later use by being grouped and stored in the access point for later recall in one step. *Id.* at 17–18 (citing Ex. 1008 ¶¶ 42, 68, 80), 24–25 (citing Ex. 1008 ¶¶ 42, 80), 31–32.

HME further asserts that Gosieski teaches a plurality of headsets as recited in claim 18 (and claim 10). *Id.* at 17 (citing Ex. 1008 ¶ 2), 28–29 (citing Ex. 1008 ¶¶ 72, 78), 31 (citing findings for claim 10).

HME asserts that the HME Wireless 6000 teaches an intercom system configured for a drive-through, quick service restaurant. *Id.* at 18 (citing Ex. 1010, APP2861), 22 (same), 30–31. HME asserts that the Wireless 6000 discloses wireless communication between the headsets and a base station with at least one parameter that adjusts a volume level of communication between the headsets and ordering point, as recited in claim 18 (and claim 9). *Id.* at 18, 27–28 (citing Ex. 1010, APP2862, APP2880), 31.

HME also asserts that a person of ordinary skill in designing wireless intercoms would have been motivated to combine the advanced features of Gosieski's intercom system with quick-service restaurant systems, such as the Wireless 6000, based on Gosieski's teachings that its intercom system can be used outside the professional audio market in other bi-directional communications applications. *Id.* at 19 (citing Ex. 1008 ¶ 79), 22. HME contends that these other applications of Gosieski include wireless ultra-thin clients, digital walkie-talkies, digital hands-free headsets for the office, call centers, manufacture, construction, military environments, and a hands-free VoIP telephone that interfaces with a WAN/LAN intranet and VoIP. *Id.*

HME asserts that further motivation comes from the intercom industry where advanced intercom features appear first in higher margin products for professional audio customers and later appear in cost-sensitive products like quick service restaurant intercoms and this porting of advanced technologies reflects industry practice. *Id.* at 19–20. HME cites the Declaration of Scott Hoeptner, who testifies that a single team of engineers designs all of HME's

intercoms for all industry customers. *Id.* at 20 (citing Ex. 1002 ¶ 9). Thus, HME asserts that engineers designing quick service restaurant intercoms around 2006 would have looked to professional audio intercoms for useful technologies and features. *Id.* at 20.

HME contends that upgrading the quick-service restaurant intercom system of the Wireless 6000 with advanced features of a professional audio intercom system of Gosieski, such as the remote monitoring and adjustment, would have been obvious as a combination of prior art elements according to known methods to yield predictable results. *Id.* at 21. Mr. Hoeptner testifies that core technologies in wireless intercom system are the same regardless of the customer for which it is intended. *Id.* (citing Ex. 1005 ¶ 9).

We agree with HME’s contentions and adopt them as our findings.

Base Station Configured to Permit Remote Review and Adjustment

3M argues that HME relies on Gosieski to disclose a base station configured to permit remote review and remote adjustment of at least one parameter from a facility remote from the location of the establishment, but Gosieski does not provide this feature. PO Resp. 23–24. 3M argues that Gosieski discloses “remote management” of system parameters by an audio engineer who is remote from the IEM and microphones worn by performers, rather than being remote from the facility. *Id.* at 25. Thus, 3M argues that Gosieski uses the term “remote adjustment” to mean adjustment of system parameters at the base station or a control surface, but nothing suggests that the base station or computer is located in another establishment. *Id.* at 25–27. 3M also argues that the design of Gosieski relies on an audio engineer who is located at a concert or live event to monitor and adjust audio output for the IEM system and speakers over a local area network (LAN). *Id.* at 26.

3M also asserts that paragraph 80 of Gosieski discloses a base station providing a local server function to provide local control of parameters and a web-based function that provides external broadcasting of an audio or visual feed over the Internet. *Id.* at 27–28. 3M argues that the term “web-based” in paragraph 80 of Gosieski refers to a web-based application accessed over a local network connection like a LAN, Intranet, or a private network and executed inside a web browser, rather than over the World Wide Web. *Id.* at 28–29 (citing Ex. 2003 ¶¶ 53–56). 3M contends that a skilled artisan would understand Gosieski’s disclosure of the local server providing web based command, control, and system monitoring capabilities for an engineer to mean that a computer at the digital control surface executes a web-based application in a browser via a LAN. *Id.* at 28.

We agree with HME’s assertion that Gosieski discloses an intercom base station configured to permit remote review and remote adjustment of a wireless volume level parameter when the base station connects to a WAN, as claimed. Gosieski teaches that system parameters can be adjusted locally through the base station’s front panel display and controls when the base station operates in a “stand-alone” mode. Pet. 17 (citing Ex. 1008 ¶ 50). Gosieski also teaches a remote management option that monitors and adjusts transceivers, base station, and other components remotely via a computer running system management software. Pet. 16 (citing Ex. 1008 ¶ 17).

The transceiver may be worn by a performer and the IEM apparatus may be integrated with a headset and microphone. Ex. 1008 ¶¶ 18, 32, 72. Among the intercom parameters that can be adjusted at the base station or a portable computer are a transceiver’s input and output levels and sensitivity and microphone settings. Ex. 1008 ¶ 46; Pet. 24. Other parameters can be

adjusted at the base station or a computer such as global system parameters, audio input parameters, IEM parameters, radio parameters, audio and RF signal strength, and microphone power. *Id.* ¶¶ 41–42, 46, 67; Pet. 23–24.

These audio parameters correspond to the claimed volume parameter of claims 1 and 18 in that IEM and microphone volume and power settings, transceiver input and output levels, and audio and RF signal strength control incoming and outgoing volume levels are adjustable to prevent damage to hearing. Ex. 1008 ¶ 46; Pet. Reply 9. In addition, the HME Wireless 6000 discloses wireless communication between the headsets and a base station with at least one parameter that adjusts a volume level of communication between the headsets and ordering point, as recited in claim 18 (and claim 9). Pet. 18, 27–28 (citing Ex. 1010, APP2862, APP2880), 31.

Gosieski also discloses that monitoring and adjustment of audio and volume parameters can occur remotely over a LAN or a WAN, as claimed. For example, Gosieski discloses an embodiment in which the system can interface with a computer or a control surface over a high speed connection of a USB2, Firewire2, Ethernet, or ATM so the computer or control surface can manage all system parameters *remotely*, i.e., not at the site or immediate vicinity of the base station. Ex. 1008 ¶¶ 17, 41–42, 50, 62; Pet. 22–23.

Gosieski teaches that remote configuration of the intercom system can be extended even further over a WAN/LAN for a hands-free VoIP telephone, and digital hands-free headset for office, call center, and other environments. Ex. 1008 ¶ 79; Pet. 23. Gosieski also teaches that the base station can act as a local server to allow *web based* command, control and system monitoring by a remote engineer. *See* Ex. 1008 ¶ 80; Pet. 23.

We agree with HME that these disclosures teach remote review and adjustment of audio system parameters, including volume, locally at the base station, remotely from a computer connected to the base station via a LAN, and remotely from a computer connected to the base station via a WAN or the Web at a facility remote from the establishment, as claimed. Pet. Reply 7–9. Remote configurability over a LAN, Ethernet, or Firewire2 might be conducted from a location that is remote from the location of the intercom. However, Gosieski also discloses that its intercom system can be configured as a hands-free headset with a business’s LAN/WAN, indicating that remote review and adjustment are provided over a WAN. Ex. 1008 ¶ 79; Pet. 22–23; Pet. Reply 7. In addition, the “base station can act as a server for web based content and control” “to provide a web based command, control, and system monitoring facility.” Ex. 1008 ¶ 80; Pet. 23; Pet. Reply 8–9.

We agree with HME that a skilled artisan would understand these disclosures to mean that audio parameters such as volume parameters can be adjusted from a location that is remote from (not at the site of) the intercom system, particularly in view of paragraph 79’s disclosure that the intercom system can interface with a WAN/LAN and VoIP system and paragraph 80’s disclosure that the system can provide web based command, control, and system monitoring capability. Gosieski thus teaches remote adjustment and remote review when the base station is connected to a WAN or the Web, as claimed, and also teaches that such remote review and adjustment capability is advantageous to implement on audio intercom systems. These teachings also provide motivation to provide remote review and adjustment capability for the Wireless 6000 because they teach advantages of remote capabilities from local to LAN, to even more remote over a WAN or the Web.

3M argues that a disclosure of the base station providing a local server function for web based command, control and system monitoring means that an engineer can control and adjust intercom parameters using a “computer at the digital control surface executing a web-based application in a browser via a LAN.” PO Resp. 28–29; Ex. 2003 ¶¶ 53–55. 3M argues that it makes little sense for a person who is not located in the same facility as a performer to be given control over the IEM worn by the performer, particularly the volume level sent to the performer’s ear. PO Resp. 26; Ex. 2003 ¶ 51.

We agree with HME that Gosieski teaches a base station configured as a server to provide web based content and web based command, control, and system monitoring to allow an engineer to monitor and adjust intercom system parameters from a facility that is remote from, i.e., not at the site of, the location of the establishment/intercom system, via a WAN, as claimed. *See* Ex. 1008 ¶ 80. This finding follows from teachings of Gosieski as a whole, as discussed above, and the following.

Gosieski discloses the invention as integrating wireless audio, video, and IEM systems into a single system that “extends system range up to 1,000 meters (line-of-site).” *Id.* ¶ 17. Gosieski thus discloses an intercom system that can be operated and adjusted from locations far removed from the performers, and presumably from a different establishment that is in the line-of-site. The system can interface with a business LAN/WAN and call centers where engineers adjusting audio parameters may be far removed from the location of persons wearing the IEMs and headsets. *See id.* ¶ 79. Thus, Gosieski teaches remote review and adjustment of IEMs and intercom parameters from locations remote from the location of the performers and even remote from the establishment where the intercom system is located.

Gosieski also teaches a variety of ways for an engineer to control and adjust audio and other intercom parameters at locations away from the base station with a computer running system management software. *Id.* ¶¶ 41–42. In view of these teachings, we do not credit Mr. Gafford’s speculation that the web based command and control capability disclosed in paragraph 80 of Gosieski involves using a “computer at the digital control surface executing a web-based application in a browser via a LAN.” PO Resp. 28; Ex. 2003 ¶ 54. Gosieski already provides local review and adjustment capability from control surface 20 via network interface 18 or from a computer using system management software connected to base station 16) over a LAN or USB2, Firewire2, Ethernet, or ATM connection. Ex. 1008, ¶¶ 35, 41–42, 44, 50.

Mr. Gafford does not cite any authority for his assertion that the web based command, control, and system monitoring in paragraph 80 of Gosieski is understood as a web-based application in a browser. *See* Ex. 2003 ¶ 54.

We understand paragraph 80’s disclosure of a base station acting as a server for “web based *content*” to mean the base station can provide content from the web to the intercom system. Thus, the base station has the ability to connect to the World Wide Web, which is a WAN,⁴ to obtain web content that can be used with or broadcast over the intercom system. We understand paragraph 80’s disclosure of a base station providing “web based *control*” to mean remote control is exercised over the intercom system via the web just like it is exercised over the intercom system by a computer connected to the base station over a LAN or other connection. Ex. 1008 ¶¶ 35, 50, 61, 62.

⁴ The ’040 patent discloses the Internet as an exemplary wide area network 20 over which remote access and control can occur. Ex. 1001, 6:15–20.

In both cases, the base station acts as a local server to receive content for the intercom system from the web, or to receive control of the intercom system over the web, thereby allowing an engineer to control parameters of the intercom system remotely over the web, which is a WAN, as claimed. Therefore, Gosieski offers many ways for audio engineers to control and adjust audio parameters from locally at the base station or a control surface, to remotely from a computer connected to the intercom system over a LAN, to even more remotely from a different location than the intercom system and establishment using a connection over the Web or a WAN, as claimed.

Even if Gosieski can be understood to teach applications that run in a web browser of a computer, as Mr. Gafford asserts without any support, then web browser applications could control intercom systems by communicating over other networks like a LAN or a WAN (e.g., the Web), as claimed.

Motivation to Combine Gosieski and Wireless 6000

3M does not dispute that the Wireless 6000 discloses a quick-service restaurant intercom system, as recited in claims 1 and 18. PO Resp. 22–23; Ex. 2003 ¶ 40. Instead, 3M argues that a skilled artisan would not have been motivated to combine a professional audio system of Gosieski with a quick service restaurant intercom like the Wireless 6000. PO Resp. 41.

3M argues that it would not have been obvious to combine Gosieski and the Wireless 6000, because Gosieski operates in real time and requires continuous monitoring by a sound engineer whereas quick service restaurant intercom systems are configured once and thereafter operate with minimal adjustments, so Gosieski teaches away from the invention of reducing the number of service visits. *Id.* at 42. 3M also argues that Gosieski is a high-bandwidth system that is extremely expensive compared to a quick service

restaurant intercom so a skilled artisan looking for a cost effective solution would not even consider Gosieski's system for a quick service restaurant intercom. *Id.* at 42–43. 3M further argues that Gosieski is designed to reproduce all of the sounds that it records and limit controls by a performer, but quick service restaurant intercoms cancel background noise. *Id.* at 43. Mr. Gafford testifies to the same matters. Ex. 2003 ¶¶ 79–82, 89–94.

As a result, 3M argues that not every feature of professional audio systems trickles down to quick service restaurant intercoms. *Id.* at 44. 3M also argues that HME never explained why the HME Wireless 6000 did not include a digital computer interface, particularly when it was released during the same time as the PRO850. *Id.* at 44–45. 3M argues that the Wireless 6000's lack of RS-232 interface teaches away from the invention. *Id.* at 45.

We find that Gosieski and Wireless 6000 are from the same field of endeavor as the '040 patent, which discloses that the “present invention is generally related to wireless intercom systems and, more particularly, to wireless intercom systems for commercial establishments.” Ex. 1001, 1:15–17. The '040 patent discloses intercom system 12 with base station 14 in wireless communication with a plurality of headsets 16a–n that are worn by staff of an establishment. *Id.* at 5:21–24, Fig. 1.

Gosieski discloses a digital wireless multi-media system that allows intercommunication among people connected to the system, which includes a base station (access point 16), a plurality of headsets with IEM devices and microphones, and body packs or transceivers (client 14) worn by performers and staff. Ex. 1008 ¶¶ 2, 18, 32, 35. The Wireless 6000 discloses a wireless audio system for use at quick service restaurants and includes a base station, headsets, and body packs. Ex. 1010, APP2861.

HME proposes to enhance the capabilities of the Wireless 6000 with the remote review and adjustment of audio parameters based on the express teachings of Gosieski. Gosieski teaches to use Gosieski's system and its features in many other environments that are very similar to a quick service restaurant environment such as a hands-free mode for the office, walkie-talkie modes, and a hands-free VoIP telephone that interfaces with business LANs/WANs. Pet. 19; Pet. Reply 7. Adding this capability to the Wireless 6000 would allow persons remote from a quick service restaurant to review and adjust volume level parameters of headsets via a WAN. Pet. Reply 7.

Notably, 3M and Mr. Gafford do not argue that this modification of the Wireless 6000 would have been beyond the level of ordinary skill in the art, or that it would involve unpredictable results. Rather, they argue that the Gosieski system is too expensive and complex to use for the Wireless 6000. We reject this argument because HME is not relying on the modification to be cost effective. *See Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983) (“[T]hat the two disclosed apparatus would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination.”).

Even so, 3M's attorney argument does not convince us that adapting technologies of advanced audio intercoms would not be cost effective. HME relies on teachings of Gosieski to use features of professional audio systems in less-expensive, lower margin intercom systems. Pet. Reply 13–14; Pet. 19–20; Ex. 1008 ¶ 79. Once the advanced technologies have been developed and vetted in demanding environments, they can be used in other intercom systems as they become less expensive to use. Pet. Reply 14.

3M's arguments that quick-service restaurant intercoms are set once and not changed and thus operate with minimal adjustment (PO Resp. 42; Ex. 2003 ¶ 93) conflict with the Background of Invention of the '040 patent, which describes the problems of quick-service restaurant intercom systems becoming unreliable or inoperable due to changing conditions, changing personnel, and improper adjustment by staff. Ex. 1001, 2:5–12. 3M does not describe the invention as the recognition of this problem or need in the industry. PO Resp. 5–7. Rather, 3M describes the '040 patent as meeting a known need in the industry to maintain and repair quick-service restaurant intercom systems in a way that minimizes or eliminates the loss of revenue that results from the need for service technicians to make on-site visits to fix intercom systems. *Id.*; Ex. 1001, 2:5–29. The Background of the Invention discloses that quick-service restaurant intercoms require periodic repairs and maintenance, and restaurants lose business when intercoms develop faults that require on-site visits by technicians to repair the system. *Id.* at 1:54–64.

HME's reasons to upgrade quick service restaurant intercom systems such as the Wireless 6000 with advanced features of Gosieski are supported by rational underpinning. As discussed above, Gosieski teaches that its intercom system can be used in many different environments. Pet. 19.

[T]he application of the present invention [extends] beyond the audio industry for other uses which might employ a bi-directional communication system (e.g., wireless ultra thin client, digital "walkie-talkie", digital hands-free headset for office, call center, manufacturing, construction, military and search and rescue environments, and a hands-free VoIP telephone that interfaces with a business's intranet (WAN/LAN and VoIP system)).

Ex. 1008 ¶ 79; Pet. 19; Pet. Reply 10, 13.

Suitable applications for Gosieski's advanced features include digital walkie-talkies, digital hands-free headsets for offices, call centers, search and rescue, manufacturing, and construction environments, and a hands-free VoIP telephone that interfaces with a business LAN/WAN. Ex. 1008 ¶ 79. This teaching would have motivated skilled artisans to combine Gosieski's remote review and adjustment feature with a similar quick service restaurant intercoms such as HME's Wireless 6000.

For this reason, we do not credit Mr. Gafford's testimony that the technical differences between Gosieski's professional audio intercom and a quick service restaurant intercom like the Wireless 6000 would have led a skilled artisan to reject Gosieski for quick service restaurants. See Ex. 2003 ¶¶ 89–94. Mr. Gafford agrees that the walkie-talkies disclosed in Gosieski are a type of intercom system. Ex. 1016, APP3243:24–3244:3; Pet. Reply 15. Mr. Gafford has little-to-no personal experience with intercoms or quick service restaurants. Ex. 1016, APP3217:17–3220:25; Pet. Reply 13. His opinions regarding quick service restaurant intercoms are based on reading the '040 patent and prior art intercom manuals, and experience as a customer of quick service restaurants. Ex. 1016, APP3220:3–APP3232:20. Much of his technical experience also comes from his work as a litigation consultant. *Id.* at APP3217:17–APP3220:25. Without litigation consulting, Mr. Gafford appears to lack even the two years of experience of a skilled artisan by his definition, or experience with quick service restaurant intercoms. See *id.* at APP3221:1–APP3232:20; Pet. Reply 13–14. While he views technologies of advanced intercoms as materially different than quick-service restaurant intercoms, he considers his general experience in telecommunication and audio products as equipping him to understand all intercom technologies.

In contrast to Mr. Gafford, Mr. Hoeptner, Chief Technology Officer of HME, has experience in the intercom industry with intercom systems for professional environments and quick service restaurants. Ex. 1005 ¶¶ 1, 5, 8, 9. Mr. Hoeptner testifies that, at least at HME, the same engineers work on both professional and quick service restaurants intercom systems. *Id.* ¶ 9. Mr. Hoeptner testifies that the core technology is the same for all wireless intercom systems, regardless of end use or application. *Id.* Mr. Hoeptner's testimony agrees with Gosieski's teaching that professional intercom system technologies are used in a wide variety of environments. *See* Pet. 19–20.

Gosieski confirms HME's practice of using intercom technologies in many different applications and porting features from one system to another.

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007). Mr. Hoeptner and Gosieski provide evidence that the remote adjustment features of Gosieski could and would have been added to improve the Wireless 6000 similarly. *See* Ex. 1008 ¶¶ 35, 41–42, 50, 61–62, 67–72, 79–80; Ex. 1005 ¶¶ 4, 8, 9.

We agree with HME that it would have been obvious to upgrade a quick service restaurant intercom system such as the Wireless 6000 with the advanced features of Gosieski, based on the express teachings of Gosieski, and the combination merely combines known prior art elements according to known methods to yield predictable results. Pet. 19–21; Pet. Reply 13–14. 3M has not shown that the proposed modification is beyond the level of ordinary skill in the art. *See* PO Resp. 41–46.

3M's arguments that Gosieski has more advanced technology and features than the Wireless 6000 intercom system does not persuade us that Gosieski or the Wireless 6000 criticizes, discredits, or otherwise discourages a skilled artisan from using Gosieski's intercom features in a quick service restaurant. *See id.* at 42, 45; *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (because prior art's disclosure did not criticize, discredit, or otherwise discourage the claimed solution, it did not teach away); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (same). Mr. Hoeptner and Gosieski provide contrary evidence that market forces encourage such cross-pollination. *See* Pet. Reply 13–14; Pet. 19–21.

Gosieski's teaching to save groups of intercom parameters in files for instant recall in one step would allow new quick service restaurant intercoms to be initialized with templates, or corrected and reset with saved parameter templates. Gosieski teaches that remote review and control of an intercom system over a LAN, WAN, or the web allows experienced audio engineers to review and adjust intercom system parameters with templates to enhance intercom operability. Ex. 1008 ¶¶ 35, 41–42, 50, 61–62, 67–72, 79–80.

Finally, HME does not propose to change the features of the Wireless 6000 that are suited for a quick service restaurant environment such as noise cancelling of background noise, or include high bandwidth settings or other features of Gosieski that are appropriate for professional audio intercoms. Rather, HME proposes to augment the ability of an engineer or technician to monitor and adjust intercom parameters of the Wireless 6000 remotely over a WAN, as claimed. Far from changing the fundamentals of the Wireless 6000, the proposed modification enhances the ability of engineers to ensure that the Wireless 6000 performs as it is designed to by adjusting parameters

to optimize performance of the Wireless 6000 for quick service restaurants. *See In re Chuang*, 603 Fed. Appx. 941, 945 (Fed. Cir. 2015) (the fact that two references teach different payment models for renting videos does not mean that a skilled artisan would have been discouraged from combining different features from the two disclosures) (non-precedential); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (“[W]e have repeatedly held that an implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller more durable, or more efficient.”); *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1355 (Fed. Cir. 2001) (motivation to alter prior art welded cover with studs existed because studs were “a cheaper, faster, and more convenient method of attachment”); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326–27 (Fed. Cir. 2008) (“The record in this case demonstrates that adapting existing electronic processes to incorporate modern internet and web browser technology was . . . commonplace at the time the [challenged] patent application was filed.”); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161–62 (Fed. Cir. 2007) (Obvious to combine an electro-mechanical toy with a “more modern” toy made with electronic components “to update it using modern electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost.”).

The absence of WAN connectability and remote adjustability in the Wireless 6000 (PO Resp. 43–46) does not teach away from including such features for the reasons discussed above. *See KSR*, 550 U.S. at 417 (“[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.”); *In re Dance*, 160 F.3d 1339, 1344 (Fed. Cir. 1998) (“[T]he ‘simplicity of the prior art is rarely a characteristic that weighs against obviousness of a more complicated device with added function.’”).

In sum, a preponderance of evidence supports HME’s contentions that the combination of Gosieski and the Wireless 6000, which is supported by rational underpinning, teaches all limitations of claims 1 and 18 and renders those claims obvious. Where 3M does not oppose assertions that Gosieski or the Wireless 6000 teach features of claims 1 and 18 (PO Resp. 23–30), HME’s assertions are considered admitted. 37 C.F.R. § 42.23(a). These contentions of HME also are supported by a preponderance of evidence.

Claims 5, 21

We also agree with HME that Gosieski discloses saving a template of parameters to a location remote from the establishment, as recited in claims 5 and 21. Gosieski discloses that audio, visual, and IEM system parameters can be monitored and adjusted remotely by a technician engineer which can include remotely over a WAN/LAN with web based command, content, and control. Ex. 1008 ¶¶ 41–42, 67–69, 72, 77–80; Pet. 23–27. Gosieski also discloses that applications and files can be stored on a network and accessed by the transceiver, and audio parameters and settings can be stored in groups and recalled in a single step. Ex. 1008 ¶¶ 42, 76; Pet. 26–27.

Gosieski discloses that an engineer's settings and preferences, which include audio parameters, can be stored, and historical data from similar performances and scenes can be stored for later use and recalled as a group. Ex. 1008 ¶¶ 23, 67–68. The settings correspond to a template of parameters. Gosieski teaches that parameters can be stored for artists and others and initiated with one key stroke “on the fly.” Ex. 1008 ¶ 69; Pet. Reply 10–11.

Gosieski also discloses that acoustical models of similar venues and historical data and settings from other, similar performances may be used by an engineer. Ex. 1008 ¶¶ 24, 67–69; Pet. Reply 11. These teachings indicate that templates of audio parameters are saved for different venues at locations that are remote from the location of the intercom system, as claimed, and the remotely-stored parameters can be accessed and used to set the parameters of the intercom system. This capability to store audio settings of the IEM, headset, microphone, and transceiver power and volume in groups, sets, and super sets for later recall and use as a group to configure an intercom system corresponds to the claimed template of parameters of claims 5 and 21.

Gosieski also discloses that these groups and super sets are saved on a computer or network for later use, and the computer can operate remotely from the intercom system over a LAN or a WAN. *See id.* ¶¶ 41–44, 61, 67–69, 72, 79, 80. We agree with HME that a skilled artisan would understand from these disclosures that configuration files can be stored in groups of parameters that are recalled with a key stroke for different venues, and the storage on a computer or network may be remote from the establishment where the intercom system is located, as claimed. Storing system settings on a network or a computer connected thereto, includes the ability to store such settings on computers that are remote over a WAN or the web or Internet.

Transmitting stored templates of configuration files between remote sites also teaches this feature. Pet. Reply 10–11. We do not credit testimony of Mr. Gafford because it does not address these remote embodiments.

We also agree with HME that including these features on the Wireless 6000 would have been an obvious way to improve the remote configurability and performance of the Wireless 6000 based on these teachings of Gosieski and Mr. Hoeptner’s testimony, for the reasons discussed above for claims 1 and 18. Pet. 20–21; Pet. Reply 10–11. The Wireless 6000 discloses the use of a preset template of parameters, i.e., a factory default, as discussed below for claims 6, 7, 22, and 23. Pet. 27, 33. Thus, we are not persuaded by 3M’s arguments that HME has not provided any rationale for the obviousness of these claimed features. See PO Resp. 32.

We also agree with HME that Gosieski’s saved parameter settings and configuration files are a *template* of parameters, as claimed. The ’040 patent specification discloses that volume and gain are intercom system parameters that affect the function and reliability of the system. Ex. 1001, 2:5–9. The ’040 patent specification discloses other parameters like audio level, volume, gain, transmit and receive volume, master volume of drive-through speakers, and base station transmit and receive volumes. *Id.* at 5:36–52. The ’040 patent discloses that multiple parameters may be used to set up, adjust, and balance intercoms, so a “given set of parameters for intercom system 12 may form a template 22, i.e., a *set of parameters* . . . that, when implemented, will give rise to a particular operational characteristic for intercom system 12.” *Id.* at 6:51–59 (emphasis added). Single parameters and templates 22 of parameters may be saved in local memory 24 or remote memory 26 for recall to initialize a new system, or reset an existing intercom. *Id.* at 7:1–52.

Gosieski discloses the same arrangement. The settings include audio, volume, power output of the base station, transceiver, microphone, IEM, and headsets, which we find correspond to volume parameters. Ex. 1008 ¶¶ 41, 46, 47. Gosieski also discloses that engineer's preferences and settings of such parameters, as well as acoustical models of similar venues and settings for similar performances may be stored and initiated or recalled with a single key stroke to initialize or improve system settings. *Id.* ¶¶ 67–69.

In opposition, 3M argues that Gosieski does not disclose a template of parameters that can be saved to a location remote from the establishment, as recited in claims 5 and 21, and the Wireless 6000 does not teach this feature. PO Resp. 30–32. 3M also argues that the applications and files that Gosieski stores on the network are not a template of parameters and the network is not remote from the establishment over a WAN. *Id.* at 31. 3M contends that HME does not contend that it would have been obvious to modify Gosieski to store a template of parameters remotely. *Id.* at 32. Mr. Gafford provides testimony to the same effect. Ex. 2003 ¶¶ 58–59 (citing Ex. 1008 ¶ 76).

Because 3M does not address the pertinent teachings of Gosieski and Wireless 6000 asserted by HME and set forth above, 3M's arguments are not persuasive. A preponderance of the evidence supports HME's contention that the teachings of Gosieski and the Wireless 6000 render obvious claims 5 and 21, and the combination is supported by rational underpinning. Pet. 17–18, 26–27, 32–33; Pet. 20–21; Pet. Reply 10–11. Based on the foregoing, we conclude that claims 5 and 21 would have been obvious in view of the combined teachings of Gosieski and the Wireless 6000.

Claims 6, 7, 22, 23

Claims 6 and 22 depend respectively from claims 1 and 18 and recite “said template of parameters is a default.” Claims 7 and 23 depend from claims 1 and 18 respectively and recite “said template of parameters is a factory default.” 3M argues that the Wireless 6000 applies a global volume boost to the outdoor microphone (outside gain) on multiple audio values but these modes are not saved in a template of parameters because the Wireless 6000 offers only manual switches that are set to “on” or “off” states for these values. PO Resp. 33. Thus, 3M argues that Gosieski and the Wireless 6000 do not teach or suggest a template of parameters as a default where one parameter is a volume level. *Id.* Regarding claims 7 and 23, 3M argues that none of the states set by the factory default switches of the Wireless 6000 serve as a template to save or access a volume level of communication with the headset for later use, as claimed. PO Resp. 34.

We are persuaded that the combined teachings of Gosieski and the Wireless 6000 render claims 6, 7, 22, and 23 obvious. HME asserts that the Wireless 6000 discloses an intercom system with multiple adjustable values or “parameters” set as a “factory default” by mechanical jumper switches. *See* Pet. 18–19 (Ex. 1010, APP2891, Fig. 26), 27 (same). As discussed above, HME relies on Gosieski to disclose the remote review and adjustment of a template of parameters that includes audio and microphone parameters. Pet. Reply 11–12; Pet. 23–24 (citing Gosieski ¶¶ 41, 46). Thus, Gosieski teaches intercom parameters that can be saved as groups or templates in files for later recall and use in configuring and operating the intercom system, as discussed above for claims 5 and 21. Pet. 17–18, 23–25; Pet. Reply 11–12.

The Wireless 6000 is relied upon by HME to teach intercom system parameters that are preset as a group or template at a factory. Pet. 18–19, 30–31; Pet. Reply 11. This teaching is readily combinable with Gosieski, which already teaches that settings and parameters may be saved in groups or sets to configure an intercom system and establish baseline settings, as discussed above. See Ex. 1008 ¶ 67. The disclosure of the Wireless 6000 of factory default setting of a group of parameters, i.e., a template, provides further motivation to combine teachings of Gosieski and the Wireless 6000. The Wireless 6000 teaches that parameters can be set before the intercom system is shipped to customers. Ex. 1010, APP2891. This preset template of factory default settings would provide a starting point for initializing and configuring the intercom system in the same way that Gosieski teaches the use of saved parameter settings and settings from other acoustic models, performances, and venues to initialize settings of the intercom system in an establishment. See Pet. 16–19, 23–25, 26–27, 31–33; Pet. Reply 10–12.

3M's arguments are not persuasive because they do not address the contentions of HME in this regard and the combined teachings of Gosieski and the Wireless 6000. 3M's arguments amount to individual attacks on the references, where HME relies on the combined teachings of the references to render claims 6, 7, 22, and 23 obvious. That is not the law of obviousness. *E.g., In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citation omitted). Recalling saved historical settings and settings from other venues and occasions or using such settings on initialization provides motivation to include factory default settings in the combined system of Gosieski and the Wireless 6000. Ex. 1008 ¶¶ 64, 67–69. The factory default settings of the Wireless 6000 may be implemented in the software templates of Gosieski.

Claims 2–4, 9–13, 15–17, 19, 20, 24–28, and 30–32

We are persuaded that Gosieski teaches a volume parameter of the template of parameters that is a master volume that can be adjusted by staff at the establishment and saved locally, or that can be adjusted remotely when the base station is connected to a WAN, as recited in claims 2, 4, 15, 16, 20, 25, 30, and 31. The template of parameters is configured for recall to reset the system and does not need to be activated locally, as recited in claims 8, 17, 24, and 32. Pet. 16–18, 25–27, 30, 35. 3M does not dispute HME’s contentions that Gosieski teaches these features, or that it would have been obvious to add them to the Wireless 6000. PO Resp. 18–34. Thus, we consider HME’s contentions of material fact to be admitted by 3M. *See* 37 C.F.R. § 42.23(a). Our analysis of HME’s contention and record evidence also leads us to find that these features are disclosed by Gosieski.

We also are persuaded that the Wireless 6000 teaches vehicle alert parameters for quick service restaurant intercoms, as recited in claims 3 and 27, and ordering point/headset volume settings and configurations, as recited in claims 9–13, 19, 26, and 28, and that it would have been obvious to include these feature in a template of parameters, as taught by Gosieski, for a quick service restaurant intercom of the Wireless 6000. Pet. 18, 19–21, 26, 27–29, 32–34. 3M does not oppose HME’s contentions that the Wireless 6000 discloses these features, or that it would have been obvious to combine them with Gosieski’s teachings. PO Resp. 18–34; Pet. 19–21. Thus, we consider HME’s contentions of material fact to be admitted by 3M. 37 C.F.R. § 42.23(a). Our analysis of HME’s contentions and record evidence also leads us to find that these features are disclosed by the Wireless 6000.

We also determine that HME's reasons for combining these teachings of Gosieski and Wireless 6000 are supported by rational underpinning and render 2–4, 9–13, 15–17, 19, 20, 24–28, and 30–32 obvious.

Conclusion

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has established by a preponderance of evidence that claims 1–13, 15–28, and 30–32 are obvious in view of Gosieski and the Wireless 6000, and the combination of these teachings is supported by rational underpinning.

2. Obviousness of Claims 1–5, 9–13, 15–21, 24–28, and 30–32 over Gosieski and 3M Wireless

a. Overview of 3M Wireless (Ex. 1011)

3M Wireless Intercom System (“3M Wireless”) discloses a wireless intercom that provides two-way, radio-frequency, audio communication in quick service drive-through restaurants and convenience stores. Ex. 1011, APP 2913. The system includes a base station, headset, and battery charger. *Id.* The base station contains system controls and a transceiver to receive and transmit signals to and from headsets. *Id.* A vehicle alert system signals the base station when a customer is present at a menu sign. *Id.* at APP2914.

b. Analysis

HME asserts that claims 1–5, 9–13, 15–21, 24–28, and 30–32 would have been obvious over Gosieski and 3M Wireless. HME sets forth in the Petition with detailed claim charts where Gosieski and 3M Wireless disclose each feature of claims 1–5, 9–13, 15–21, 24–28, and 30–32. Pet. 35–36, 37–43. HME asserts reasons for combining the teachings of Gosieski and 3M Wireless to render obvious the subject matter of these claims. *Id.* at 36–37.

HME relies on Gosieski to disclose the same features of claims 1–5, 9–13, 15–21, 24–28, and 30–32 as in the first ground of unpatentability. *Id.* at 35, 37–43 (citing *id.* at 16–18, 21–35). HME relies on 3M Wireless to disclose a wireless intercom system for use in a quick service restaurant (claims 1 and 18), a vehicle alert (claims 3, 27), volume levels captured by a microphone and emitted by a speaker at an ordering point and sent to a headset (claims 9, 10, 26), and ordering point (claims 12, 13, 19, 28). *Id.* at 35–36, 37–43. HME contends that it would have been obvious to combine the teachings of Gosieski and 3M Wireless to render obvious claims 1–5, 9–13, 15–21, 24–28, and 30–32 based on Gosieski’s express teachings and the actual practice in the intercom industry of using features of more advanced intercoms in other systems and the modification merely combines prior art elements according to known methods for predictable results. *Id.* at 36–37.

3M does not dispute HME’s contentions regarding the teachings of Gosieski or 3M Wireless for claims 1 and 18, except to assert that Gosieski fails to disclose remote review and adjustment when connected to a WAN, and the 3M Wireless does not remedy these alleged deficiencies of Gosieski because the 3M Wireless lacks remote adjustment ability. PO Resp. 35–38.

Regarding claims 5 and 21, 3M argues that Gosieski does not disclose a template of parameters saved to a remote location for the same reasons as the first ground, and 3M Wireless lacks these features. *Id.* at 38.

3M does not oppose HME’s assertions that Gosieski and 3M Wireless teach other limitations of claims 1–5, 9–13, 15–21, 24–28, and 30–32. Thus, we consider these contentions to be admitted. 37 C.F.R. § 42.23(a). Our analysis of HME’s contentions and record evidence also leads us to find that these features are disclosed by Gosieski and the 3M Wireless and obvious.

The 3M Wireless discloses a two-way, radio frequency intercom system for quick service drive-through restaurants and convenience stores, as recited in claims 1 and 18. Pet. 37 (citing Ex. 1011, APP2913). The 3M Wireless discloses a vehicle alert system that detects a vehicle in the drive through lane and signals the base station to indicate a customer is present at the menu sign, as recited in claims 3 and 27. *Id.* at 38 (citing Ex. 1011, APP2913–14), 43. The 3M Wireless discloses adjusting parameters for the volume between a headset and ordering point such as amplifier (volume) from a microphone at a menu sign to headset receivers and talk/listen audio from or to a speaker at an ordering point, as recited in claims 9, 11, 18, and 26. *Id.* at 35–36 (citing Ex. 1011, APP2915, 2917, 2921), 38–43 (citing Ex. 1011, APP2915, APP2916, 2918). The 3M Wireless also discloses an ordering point configured as recited in claims 12, 13, 19, and 28. Pet. 40–43 (citing Ex. 1011, APP2918, 2921). 3M does not dispute these contentions of material fact by HME. See PO Resp. 36–38. Thus, we consider HME’s contentions to be admitted by 3M. See 37 C.F.R. § 42.23(a). Our analysis of HME’s contentions and record evidence also leads us to find that these features are disclosed by the 3M Wireless.

We agree with HME’s assertion that Gosieski discloses features of claims 1, 2, 4, 5, 10, 15–18, 20, 21, 24, 25, and 30–32 for the reasons discussed above for the first ground and based on the evidence presented in the Petition and discussed above. See Pet. 35, 37–43. We also agree with HME’s assertion that 3M Wireless discloses features of claims 1, 3, 9, 11–13, 18, 19, and 26–28 based on the evidence presented in the Petition. See *id.* at 35–43 (citing Ex. 1011, APP2913, 2915, 2917, 2921).

3M's arguments that Gosieski fails to disclose remote review and adjustment of an intercom base station, as recited in claims 1 and 18, or saving a template of parameters to a remote location, as recited in claims 5 and 21, are not persuasive for the reasons discussed for the first ground of unpatentability that Gosieski discloses and renders obvious these features.

We also agree with HME's contentions that a skilled artisan would have been motivated to combine the advanced features of Gosieski with a quick service restaurant intercom such as 3M Wireless for the same reasons they would have been combined with the Wireless 6000 in the first ground, e.g., the express teachings of Gosieski and industry practice. Pet. 36–37; Pet. Reply 12. Like the Wireless 6000, the 3M Wireless discloses a wireless intercom in the same field as the '040 patent, i.e., a wireless intercom for commercial establishments. Ex. 1001, 1:15–17. The '040 patent discloses intercom system 12 with base station 14 in wireless communication with headsets 16a–n worn by staff of establishment 10. *Id.* at 5:21–24, Fig. 1. The 3M Wireless discloses a wireless audio system for use at quick service restaurants including a base station, headsets, and body packs worn by staff. Ex. 1011, APP2909, 2913–2917.

Motivation to Combine Gosieski and 3M Wireless

3M also argues that a skilled artisan would not have been motivated to combine Gosieski's professional system with the 3M Wireless quick service restaurant intercom. PO Resp. 41. 3M makes the same arguments that were made against the combination of Gosieski and the Wireless 6000. *Id.* at 41–46. 3M does not argue that 3M Wireless teaches away by lacking an RS-232 interface as 3M did for the Wireless 6000. *Id.*

We agree with HME that a skilled artisan would have been motivated to combine the advanced features of Gosieski with a known quick service restaurant intercom system such as 3M Wireless for the reasons asserted by HME for combining the teachings of Gosieski and the Wireless 6000 in the first ground of unpatentability, as discussed above. Pet. 36–37. HME’s reasons for combining the teachings of Gosieski with an intercom system of a quick service restaurant are supported by rational underpinning based on the teachings of Gosieski to use Gosieski’s intercom features in many other applications including those that are very similar to quick service restaurants and the testimony of Mr. Hoeptner that intercom system features are ported from one system to another routinely. HME’s reasons are equally applicable to the combination of Gosieski and 3M Wireless. Indeed, 3M combines its arguments against the combinations of Gosieski with the Wireless 6000 and 3M Wireless. 3M makes no distinction in the configuration or features of the 3M Wireless compared to the Wireless 6000 in its arguments against the motivation to combine Gosieski with either intercom system, except to allege that the Wireless 6000 teaches away because it was not configured with an RS-232 interface. PO Resp. 42–46, 45; Ex. 2003 ¶¶ 78–99. Again, the simplicity of prior art rarely weighs against the obviousness of a more complicated device with added function. *In re Dance*, 160 F.3d at 1344.

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has established by a preponderance of evidence that claims 1–5, 9–13, 15–21, 24–28, and 30–32 are obvious over Gosieski and the 3M Wireless, and the combination of their teachings is supported by rational underpinning.

*3. Obviousness of Claims 6–8 and 22–24
over Gosieski, 3M Wireless, and Telex RadioCom*

a. Overview of Telex RadioCom (Ex. 1013)

Telex RadioCom discloses operating instructions for a professional wireless intercom system. Ex. 1013, APP3098. Telex RadioCom discloses resetting of factory default settings thereby erasing all user-programmed frequencies that were entered previously. *Id.* at APP3137.

b. Analysis

HME asserts that claims 6–8 and 22–24 would have been obvious over Gosieski, 3M Wireless, and Telex RadioCom. HME sets forth in the Petition how the disclosure of each reference relates to features of claims 6–8 and 22–24. Pet. 44. HME asserts reasons for combining the teachings of Gosieski, 3M Wireless, and Telex RadioCom to render obvious the subject matter of claims 6–8 and 22–24. *Id.* at 44–45. In addition, HME provides detailed claim charts that specify where each element of claims 6–8 and 22–24 is taught by Gosieski, 3M Wireless, and Telex RadioCom, relying in part, on HME’s contentions regarding Gosieski’s disclosure of some features in the first ground of unpatentability. *Id.* at 45–47.

HME relies on Gosieski to teach a template of parameters including a volume level as asserted in the first ground and Telex RadioCom to teach a template of parameters set as a factory default and configured for recall to reset the system, as recited in claims 6–8 and 22–24. *Id.* at 45–47.

We find that Gosieski and Telex RadioCom teach all of the features of claims 6–8 and 22–24 for the reasons set forth above in the first ground for Gosieski, and for the following reasons for Telex RadioCom.

Telex RadioCom discloses a wireless intercom system including a base station that is configured to allow intercom system parameters to be recalled and reset to factory default values, as recited in claims 6–8 and 22–24. Pet. 44–46 (citing Ex. 1013, APP3137). Pressing certain buttons on the base station will recall factory default parameters and reset the intercom system with those parameters, while erasing the user-entered parameters previously-entered. *Id.*

3M acknowledges that Telex RadioCom discloses a wireless intercom that allows users to select communication frequency channels between the base station and beltpacks and reset user-programmed channel frequencies with frequency channels from a factory-default setting. PO Resp. 39–40. 3M argues that Gosieski, 3M Wireless, and Telex RadioCom do not teach or suggest “said template of parameters is a default” (claims 6, 22) or “factory default” (claims 7, 23) because factory default settings of Telex RadioCom relate to communication frequencies between the beltpacks and base station, and do not include a *volume* level as one of the parameters in the template of parameters, as recited in claims 1 and 18. *Id.* at 40–41.

3M’s arguments are not persuasive primarily because they amount to individual attacks on the references when HME has relied on the combined teachings of the references to render claims 6–8 and 22–24 obvious. HME relies on Gosieski to teach a template of parameters that can be saved as a group and recalled to reset the intercom system, to include a parameter for volume levels, as claimed. Pet. 25 (citing Ex. 1008 ¶ 42), 27 (same), 44–45; Pet. Reply 13. HME relies on Telex RadioCom to teach parameters that can be saved as a factory default setting and recalled to reset the intercom system parameters. Pet. 45–46.

We agree with HME's contentions that it would have been obvious to modify Gosieski to include this feature of the Telex RadioCom, which is a professional intercom system like Gosieski, to designate a particular group of Gosieski's saved parameters as a factory default setting, as claimed. *Id.* at 44–45. HME asserts that this modification merely combines known prior art elements according to known methods to yield predictable results. *Id.* at 45. HME asserts that the express teachings of Gosieski and the industry practice in the wireless intercom industry would have motivated a skilled artisan to use features of other wireless intercom systems, such as Telex RadioCom, in Gosieski and the 3M Wireless. *Id.* at 44–45; *see also* Pet. Reply 11–12, 13 (Gosieski teaches remote review and adjustment of a template of parameters including audio and microphone volume, and Telex RadioCom teaches the abstract idea that such parameters can be default values).

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has established by a preponderance of evidence that claims 6–8 and 22–24 are obvious over Gosieski, 3M Wireless, and the Telex RadioCom, and the combination of their teachings is supported by rational underpinning.

III. CONCLUSION

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has demonstrated by a preponderance of evidence in this proceeding that claims 1–13, 15–28, and 30–32 of the '040 patent are unpatentable.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–13, 15–28, and 30–32 of the '040 patent are unpatentable; and

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

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