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Paper 42
Date: March 14, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.,
Petitioner,

v.

STA GROUP LLC,
Patent Owner.

IPR2023-01294
Patent 8,831,664 B2

Before MICHAEL J. FITZPATRICK, DAVID C. MCKONE, and KEVIN C. TROCK, *Administrative Patent Judges*.

FITZPATRICK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner, Motorola Solutions, Inc., filed a Petition to institute an *inter partes* review of claims 1–20 of U.S. Patent No. 8,831,664 B2 ("the '664 patent") pursuant to 35 U.S.C. § 311(a). Paper 1 ("Pet."). Patent Owner, STA Group LLC, filed a Preliminary Response pursuant to 37 C.F.R. § 42.107(b). Paper 8 ("Prelim. Resp."). With our authorization, Petitioner filed a Preliminary Reply (Paper 10), and Patent Owner filed a Preliminary Sur-reply. Paper 11. We granted the Petition. Paper 12 ("Inst. Dec.").

During the review, Patent Owner filed a Patent Owner Response to the Petition (Paper 19 ("PO Resp.")), Petitioner filed a Reply (Paper 26 ("Pet. Reply")), and Patent Owner filed a Sur-Reply (Paper 30 ("PO Sur-Reply")). Petitioner also filed a Motion to seal and for entry of a protective order. Paper 27 ("Motion").[1] Additionally, with our authorization (*see* Paper 32), Petitioner filed a paper identifying what it asserts are new arguments improperly raised in Patent Owner's Sur-reply (Paper 33) and Patent Owner filed a response thereto (Paper 34).[2] Oral hearing was held January 15, 2025. A transcript of that hearing is of record in this case. Paper 38 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6, and this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and

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[1] By separate Order, we grant the Motion.
[2] Petitioner identifies two such arguments. Paper 33, 1–2. The first argument concerns Ground 1 (*see id*. at 1), which, as explained below we do not reach. The second argument concerns Ground 7 (see *id*. at 2), but is unpersuasive as discussed below.

arguments raised during the review. For the reasons discussed below, we determine that Petitioner has proven, by a preponderance of the evidence, that claims 1–20 of the ’664 patent are unpatentable.

A. Related Matters

The parties identify the following district court proceeding involving the ’664 patent, *STA Grp. LLC v. Motorola Solutions, Inc.*, No. 2-22-cv-00381 (E.D. Tex.). Paper 9, 5; Paper 5, 1.

B. Real Parties In Interest

Petitioner identifies itself, Motorola Solutions, Inc., as the real party in interest. Paper 9, 5.

Patent Owner identifies itself, STA Group LLC, as the real party in interest. Paper 5, 1.

C. The ’664 Patent

The ’664 patent “relates . . . to a system and a method for providing channel configurations in a communications environment.” Ex. 1001, 1:18–21. The ’664 patent explains that in the prior art:

> Typically, a management center supports a plurality of channels, where less important channels are rendered to one ear, and channels that are more important are rendered to the other ear. Universally, channels are statically configured, where the volume of each channel can be manually adjusted by an end user. When important information needs to be broadcast, channels should be configured optimally. If the channels are not fully utilized, then messages are not received by their intended recipients.

Ex. 1001, 1:33–42. Thus, according to the ’664 patent, it was a challenge “to offer a system or a protocol that offers an effective coordination for channels in a communications environment.” *Id.* at 1:42–46.

The ’664 patent discloses a method of “monitoring a plurality of channels provisioned for an endpoint” and “reacting to an alert message by adjusting one of the channels for the endpoint.” Ex. 1001, 2:11–14. Included among possible adjustments are the following: “increasing a volume associated with the channel receiving the alert message,” “changing a spatial direction from which the alert message and an associated media stream are conveyed to the endpoint,” “provision[ing] the alert message from a left ear to a right ear of an end user of the endpoint,” “determining which is a primary channel of the channels and provisioning the alert message to the primary channel of the endpoint,” “turning a volume down on every other channel besides a channel being used for the alert message,” “using out-of-band signaling,” and “sending the alert message until feedback has been received, which indicates that the alert message has been acknowledged by the endpoint.” *Id.* at 1:15–32.

Alert messages are “meant to connote any type of message or signal that was intended for one or more end users” and “may inform the end users . . . of some situation, or alternatively simply convey some information from a sender.” Ex. 1001, 7:41–46. Alert message could even include “simple conversational exchanges and/or simple correspondence.” *Id.* at 7:46–48.

Figure 5 is reproduced below.

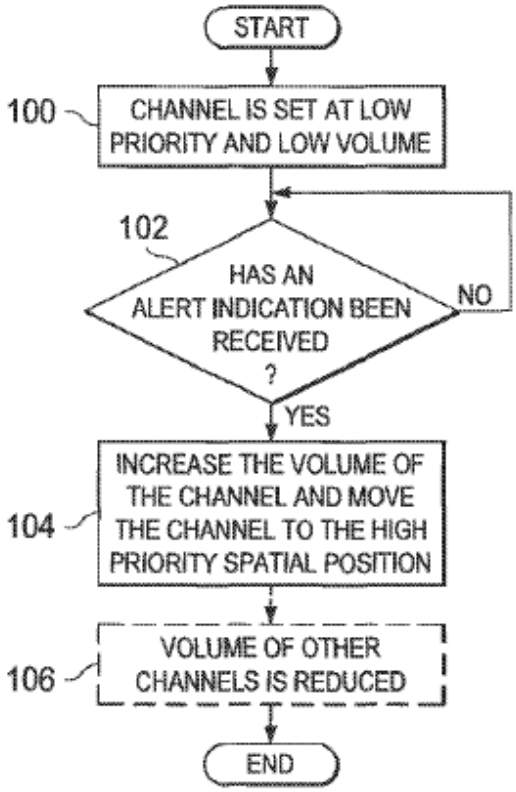

FIG. 5

Figure 5, reproduce above, shows "a simplified flowchart illustrating an example scenario involving communication system 10" and shows adjustments made at steps 104 and 106 in response to receiving an alert at step 102. Ex. 1001, 7:60–61.

The '664 patent was filed on August 16, 2011, and claims priority as a continuation of an application filed December 19, 2008. *Id.*, codes (22), (63). Thus, the earliest possible effective filing date for the challenged claims is December 19, 2008.

D. The Challenged Claims

Inter partes review was sought and instituted for claims 1–20, which are all of the claims of the ’664 patent. Pet. 2; Inst. Dec. 2. Of these, claims 1, 11, and 16 are independent. Claim 1 is reproduced below.

> 1. A method, comprising:
>
> [a] monitoring media streams associated with channels in a communication environment;
>
> [b] receiving an alert in one of the media streams; and
>
> [c] elevating a priority associated with the media stream receiving the alert, [c'] such that an adjustment is made to how the media stream is provisioned to an endpoint in the communication environment.

Ex. 1001, 8:32–39.[3] Independent claim 11 is directed to “[n]on-transitory readable media that includes code for execution and when executed by a processor operable to perform operations comprising” [a], [b], and [c]. *Id.* at 8:65–9:5. Independent claim 16 is directed to “[a]n apparatus, comprising: a memory element; a processor; and a management element stored in the memory element and configured to interface with the processor such that the apparatus is configured for” performing [a], [b], and [c]. *Id.* at 9:21–10:8. Independent claims 11 and 16 are similar to claim 1, but they do *not* recite the further limitation [c'], i.e., “such that an adjustment is made to how the media stream is provisioned to an endpoint in the communication environment.”

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[3] The Petition refers to what we have labeled limitations [c] and [c'] as simply limitation [c]. *See, e.g.*, Pet. 32–33. As discussed below, limitation [c'] appears in claim 1 but not in the other independent claims being challenged, i.e., claims 11 and 16. Hence, we label limitation [c'] separately.

E. Asserted Patents and Printed Publications

Name	Reference	Ex. #
Downs	US 5,754,960, issued May 19, 1998	1004
EDACS	*A System and Standards Definition for a Digital Land Mobile Radio System*, TIA/EIA TELECOMMUNICATIONS SYSTEMS BULLETIN (Nov. 1998)	1005
Hancock	US 2006/0147028 A1, published July 6, 2006	1006
Reich	US 2007/0197248 A1, published Aug. 23, 2007	1007
Kim	WO 2004/034350 A1, published Apr. 22, 2004	1008
Ishibashi	JP 2006/340164 A, published Dec. 14, 2006	1009[4]
Goss	US 7,330,693 B1, issued Feb. 12, 2008	1010

In addition to these references, Petitioner relies on a declaration by David Hilliard Williams. Ex. 1002. Patent Owner relies on a declaration by Shmuel Shaffer, Ph.D. Ex. 2005.

[4] Exhibit 1009 includes the actual Japanese published application (pages 1–13), followed by an English translation thereof (pages 14–41), followed by a certification of the translation (page 42).

F. The Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Ground No.	Claim(s) Challenged	35 U.S.C. §	Basis
1	1–6, 8, 9, 11–20	103(a)[5]	Downs, EDACS
2	1–6, 8, 9, 11–20	103(a)	Downs, EDACS, Childress
3	3–5, 13, 14, 18, 19	103(a)	Downs, EDACS, Hancock
4	3–5, 13, 14, 18, 19	103(a)	Downs, EDACS, Childress, Hancock
5	7, 10	103(a)	Downs, EDACS, Reich
6	7, 10	103(a)	Downs, EDACS, Childress, Reich
7	1, 2, 6–9, 11, 12, 15–17, 20	103(a)	Kim
8	3–5, 13, 14, 18, 19	103(a)	Kim, Ishibashi
9	10	103(a)	Kim, Goss

Pet. 2. As discussed below, Ground 7, 8, and 9 are persuasive on all challenged claims, and, thus, we need not and do not reach Grounds 1–6.

II. ANALYSIS

A. Obviousness Generally

A claim is unpatentable "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a

[5] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, which was enacted September 16, 2011, amended 35 U.S.C. §§ 102 and 103. AIA § 3(b)–(c). Those amendments became effective eighteen months later on March 16, 2013. *Id*. at § 3(n). Because the application from which the '664 patent issued was filed before March 16, 2013, any citations herein to 35 U.S.C. §§ 102 and 103 are to their pre-AIA version. *Id*. at § 3(n)(1).

whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). "Obviousness is a question of law based on underlying facts." *MobileMedia Ideas LLC v. Apple Inc.*, 780 F.3d 1159, 1167 (Fed. Cir. 2015). The underlying facts include "(i) the scope and content of the prior art, (ii) the differences between the prior art and the claimed invention, (iii) the level of ordinary skill in the field of the invention, and (iv) any relevant objective considerations of nonobviousness." *Id*. (citing *Graham v. John Deere of Kan. City*, 383 U.S. 1, 17–18 (1966)).[6] An additional underlying fact is whether there was a reason to combine prior art teachings when so asserted. *Id*.; *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007) ("[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does . . . because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known."). Further, an obviousness determination based on combining prior art references, as is the case with some of Petitioner's Grounds, "requires not only the existence of a motivation to combine elements from [the] different prior art references, but also that a skilled artisan would have perceived a reasonable expectation of success in

[6] "[E]vidence rising out of the so-called 'secondary considerations' must always when present be considered en route to a determination of obviousness." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983). The record before us, however, lacks any secondary considerations evidence.

making the invention via that combination." *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006).

B. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The "person having ordinary skill in the art" is a hypothetical construct, from whose vantage point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Petitioner proposes that a person of ordinary skill in the art of the '664 patent "would have had a bachelor's degree in computer science, electrical engineering, or a similar field, and would have had approximately two years industry experience in networking or communication systems." Pet. 5; *see also id.* ("A person with less or different education but more relevant practical experience, or vice versa, may also meet this standard."). Patent Owner very similarly proposes that the skilled artisan "would have [had] a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and two to three years [of] experience in designing or developing telecommunication systems." PO Resp. 24–25 (citing Ex. 2005 ¶42).

Both of the parties' proposals as to the level of ordinary skill in the art are consistent with the disclosure of the '664 patent and the asserted prior

art. The distinction between the parties' proposals is minimal and would not change the outcome of this Decision. Thus, we adopt and apply Patent Owner's proposal.

C. Claim Construction

The challenged claims should be read in light of the specification, as they would be interpreted by one of ordinary skill in the art. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we generally give claim terms their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) ("The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question." (internal quotation marks omitted)); *see also* 37 C.F.R. § 42.100(b) (stating that claims are construed in IPRs according to the same standard as used in federal court).

Petitioner does not propose a construction of any claim terms. Pet. 5–6.

Patent Owner proposes that we make three express constructions consistent with what Patent Owner represents the parties to have agreed to in district court in *STA Grp. LLC v. Motorola Solutions, Inc.*, No. 2-22-cv-00381 (E.D. Tex.). PO Resp. 10–11 (citing Ex. 2004, 16).[7]

First, Petitioner argues that the steps of claim 1 "must be performed in the recited order," as agreed to in district court. *Id*. at 10 (citing Ex. 2004,

[7] Exhibit 2004 is a "CLAIM CONSTRUCTION ORDER" entered June 3, 2024 by the Court in *STA Grp. LLC v. Motorola Solutions, Inc.*, No. 2-22-cv-00381 (E.D. Tex.) regarding claim terms of multiple asserted patents including the '664 patent.

16). We generally agree, with the one caveat acknowledged by counsel for Patent Owner during the hearing. The caveat is that, although step [a] must be performed before step [b], it is within the scope of claim 1 if step [a] continues to be performed even after step [b] begins. Tr. 25:25–26:3 (Mr. Engel: "Well, I think in practicality, there would always be monitoring because there's multiple media streams. So, you could have multiple alerts come in and the system could decide which one is more important. So, I don't think you stop monitoring per se."). We agree that continued performance of step [a], even after step [b] begins, is within the scope of claim 1.

Second, Patent Owner proposes that "endpoint" means "end-user device," as agreed to in district court. PO Resp. 10 (citing Ex. 2004, 16). We adopt this construction. However, as will become evident below, this construction does little to address the actual dispute between the parties regarding application of "endpoint" to the prior art asserted in Ground 7 (Kim).

Third, Patent Owner proposes that "media stream" means "audio or video or both, which may include associated data," as adjudicated in district court. PO Resp. 11 (citing Ex. 2004, 42). We adopt this construction.

D. Grounds 1–6

As will be discussed below, Petitioner shows that all of the challenged claims are unpatentable under Grounds 7, 8, and 9. Thus, we need not reach Grounds 1 through 6. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner "is entitled to a final written decision addressing all of the claims it has challenged"); *Boston Sci. Scimed, Inc. v.*

Cook Grp. Inc., 809 F. App'x 984, 990 (Fed. Cir. 2020) (nonprecedential) (stating that the "Board need not address issues that are not necessary to the resolution of the proceeding," such as "alternative arguments with respect to claims [the Board] found unpatentable on other grounds").

E. Ground 7 (Kim)

Petitioner's Ground 7 contends that claims 1, 2, 6–9, 11, 12, 15–17, 20 would have been obvious over Kim. Pet. 2. The Petition summarizes Kim (Pet. 16–19) and explains how it teaches or renders obvious the subject matter of the challenged claims (*id.* at 66–80). We address each claim below. We likewise summarize Kim before addressing each challenged claim.

1. Summary of Kim (Ex. 1008)

Kim is titled "Television Set and Method for Notifying a Disaster Situation." Ex. 1008, code (54). Kim was filed October 9, 2003, and published April 22, 2004. *Id.*, codes (22), (43). Thus, Kim is prior art to the challenged claims under 35 U.S.C. §§102(a), (b), and (e). *See* Ex. 1001, code (63) (identifying December 19, 2008, as the earliest possible effective filing date of the challenged claims).

A stated objective of Kim is to "provide a television system for propagating emergency-warning broadcast signals to individual houses on the condition that the occurrence of a disaster or calamity has been expected, and a method for propagating emergency-warning broadcast signals for use in the same television system." Ex. 1008, 2:3–9.

In one embodiment, Kim discloses using two signal receivers simultaneously, whereby one signal receiver facilitates regular television

viewing while the other monitors a dedicated emergency-warning broadcast station. *Id.* at 23:2–18, Fig. 5.

Figure 5 of Kim is reproduced below.

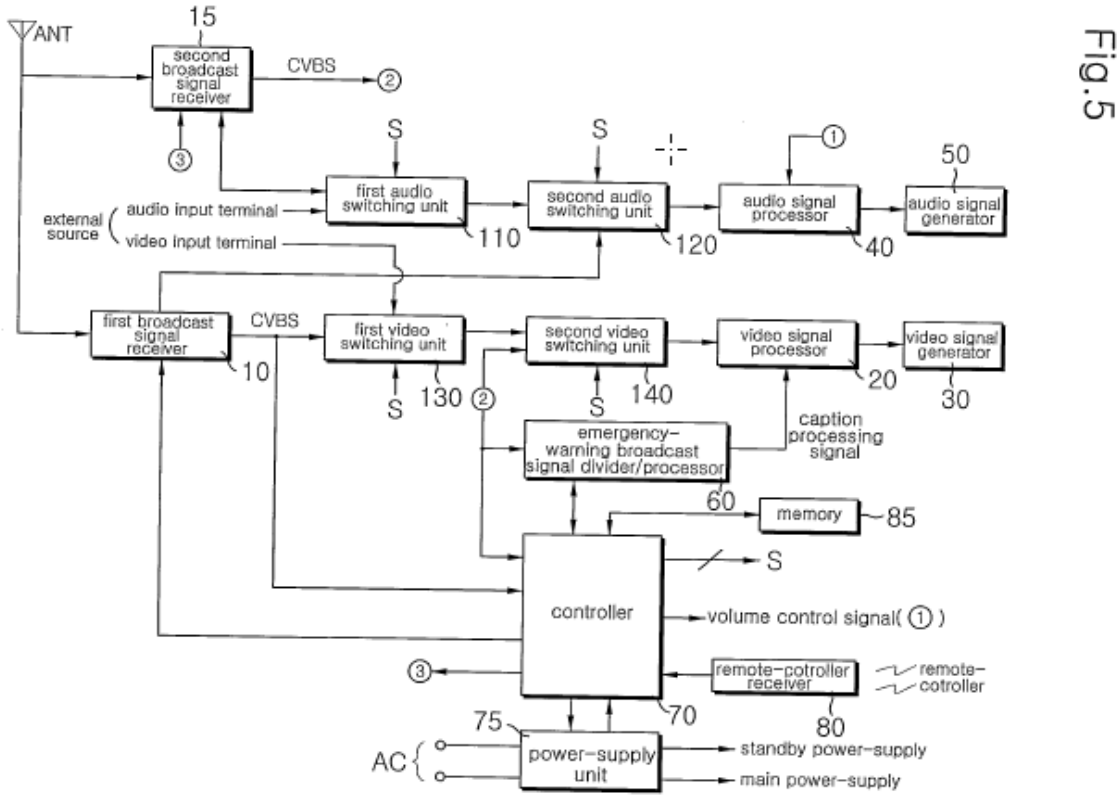

Figure 5, reproduced above, shows "a block diagram illustrating a TV system having a dedicated emergency-warning broadcast tuner." Ex. 1008, 20:7–8. The system includes first and second broadcast signal receivers 10 and 15. *Id*. at 20:9–10. "[T]he second broadcast signal receiver 15 is a receiver for receiving only the emergency-warning broadcast signal, includes a tuner and an IF (Intermediate Frequency) processor, and performs a channel selection control operation using the controller 70." *Id*. at 20:17–21. "The second broadcast signal receiver 15 is fixed to a prescribed channel to receive only the emergency-warning broadcast signal." *Id*. at 20:21–24.

Kim explains:

> Although the controller 70 receives other channels other than the emergency-warning broadcast channel from the first broadcast signal receiver 10, if the emergency-warning broadcast signal is suddenly propagated, the controller 70 can transmit the emergency-warning broadcast signal using the second broadcast signal receiver 15 and the emergency-warning broadcast signal divider/processor 60, and can determine whether a real-time emergency-warning broadcast operation associated with the corresponding area is performed. Therefore, the emergency-warning broadcast signals propagated over the second broadcast signal receiver can be propagated to TV viewers by means of individual switching units 110, 120, 130, and 140.

Id. at 23:2–14. Thus, when an emergency-warning broadcast signal is received in Kim, it is processed by the "emergency-warning broadcast signal divider/processor," and "[t]he TV system's controller 70" can carry out certain functions in regards to the emergency warning broadcast, including turning the TV on if off, turning to the prescribed channel, increasing the volume, and processing captions for display. *Id.* at 3:22–23, 14:7, Fig. 3.[8]

2. Claim 1

Claim 1 is a method claim comprising three steps, which steps the Petition labels [a] through [c]. We follow suit in our analysis below although we separately label and discuss the further limitation of step [c'], reciting that "an adjustment is made to how the media stream is provisioned to an endpoint in the communication environment."

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[8] Figure 3 of Kim, not reproduced here, "is a flow chart illustrating operations for use in the TV system in accordance with preferred embodiments." Ex. 1008, 5:12–14.

a) [a] "monitoring media streams associated with channels in a communication environment"

Petitioner argues that Kim performs this step, as its two broadcast signal receivers (10 and 15) enable the controller (70) to "***monitor***[] individual channels." Pet. 67 (citing Ex. 1008, 14:7–12, Fig. 5). Petitioner points out that, in Kim, the monitored channels "carry 'digital broadcast signal[s]' 'composed of data streams,' divided into 'predetermined units (i.e., packet[s]),' and transmitted in 'the divided data sections.'" *Id*. (quoting Ex. 1008, 29:20–24). In other words, Kim's digital broadcast signals are the recited "media streams associated with channels," and they are monitored by the controller.

Patent Owner does not dispute that Kim teaches step [a]. *See* PO Resp. 47–57. We are persuaded that it does.

b) [b] "receiving an alert in one of the media streams"

Petitioner argues that Kim performs this step, as Kim explicitly states "controller 70 receives an emergency-warning broadcast signal," which is added in packets to the "digital broadcast signal" (media stream). Pet. 68 (citing Ex. 1008, 14:13–14, 29:30–21, Fig. 1). Petitioner further points out that, in Kim, "[a]n emergency-warning broadcast starts when the 'emergency-warning broadcast signal is suddenly propagated' in the media stream, beginning with a 'TV automatic emergency-warning broadcast start' code." *Id*. at 68–69 (citing Ex. 1008, 7:7–9, 23:4–5). In other words, Kim's start information/code serves as the "alert" recited in the claim. *See* Ex. 1008, 7:7–9 ("TV emergency-warning broadcast *start information* indicates a start time of the TV emergency-warning broadcast." (emphasis added)); *see also id*. at 23:15–18 ("Although the TV viewer currently views

and listen[s] to a TV program of another channel, he or she can quickly receive the emergency-warning broadcast signal via a dedicated emergency-warning broadcast tuner.”).

Patent Owner does not dispute that Kim teaches step [b]. *See* PO Resp. 47–57. We are persuaded that it does.

c) [c] “elevating a priority associated with the media stream receiving the alert, [c'] such that an adjustment is made to how the media stream is provisioned to an endpoint in the communication environment”

Petitioner argues that Kim performs this step, including the further limitation [c'], regardless of “whether or not the TV is off, muted, or ‘the TV viewer currently views and listen[s] to a TV program of another channel’.” Pet. 70 (quoting Ex. 1008, 29:16–19). For example, Petitioner points out that, when an alert is received, the controller “powers the TV system on, converts a system operation mode into a TV viewing mode, and controls the TV system to output broadcast data of the prescribed emergency warning broadcast channel in the form of AV data.” Pet. 70–71 (quoting Ex. 1008, 26:10–14 (Petitioner’s bracketed alterations omitted)); *see also* Ex. 1008, 3:13–14 (“Therefore, although the TV system is powered off, it can be automatically powered on when receiving an emergency-warning broadcast signal.”), Fig. 3 (flowchart step “V”). Also, the controller can “output[] a volume control signal to increase a volume level of the TV system.” Ex. 1008, 27:16–17 (cited at Pet. 71), Fig. 3 (flowchart step “VIII”). Further, if a viewer is watching a different channel when the alert is received, “the controller selects a channel of a broadcast signal receiver in order to receive a broadcast signal of a predetermined emergency-warning broadcast channel in a power-supply standby mode and a video play mode.” *Id.* at 4:12–16;

see also id. at Fig. 3 (flowchart step "VII"), 23:15–18 ("Although the TV viewer currently views and listen[s] to a TV program of another channel, he or she can quickly receive the emergency-warning broadcast signal via a dedicated emergency-warning broadcast tuner.").

Patent Owner argues that "*Kim's* system does not 'elevate a priority associated with the media stream' nor does Kim adjust 'how the media stream is provisioned ***to an endpoint***.'" PO Resp. 48 (quoting claim 1). This is so, according to Patent Owner, because "*Kim* is a television endpoint that ***reacts*** to received broadcast television signals by adjusting endpoint settings; *Kim* does not have any control over the broadcast television signals themselves and how the broadcast signals are provisioned ***to*** the endpoint (the television)." *Id*.; *see also id*. at 49 ("*Kim* simply adjusts the settings of its endpoint (*i.e.*, the television)."). Patent Owner elaborates as follows:

> *Kim's* system simply (1) receives a broadcast signal at the television; (2) detects the inclusion of an emergency-warning broadcast signal; and (3) powers on the television (or adjusts a volume of the television or channels a television channel) when predetermined registration information is detected from the emergency-warning broadcast signal. Ex. 1008, 4:1–12; Ex. 2005, ¶¶142–143. In other words, *Kim* describes an endpoint that receives broadcast data, does not elevate a priority associated with the broadcast data, and then simply makes adjustments to itself in response to receiving the broadcast data.

PO Resp. 51–52. Similarly, at the hearing, counsel for Patent Owner argued the following:

> Kim is a specialized television. It is a television that listens for an alert, and it is capable of displaying that alert and displaying at a certain volume level. Kim is not the embodiment of the '664 at all. The '664 is designed so that you can implement this at a centralized location and not have to have all those fire departments buy all new radios. That's exactly what the

> embodiment of the ’664 is. Do this at a centralized location or multiple centralized locations, but don’t force those police departments to go out and buy all new radios for all of their officers. So, Kim is the example where you’d have to buy all new radios. And I think the other important point about Kim is, Kim is the endpoint. It’s one endpoint that receives these audio or video determinations, and then it turns on or changes the volume, but it doesn’t actually change anything about the media stream.

Tr. 29:15–30:2.

Patent Owner’s arguments are not persuasive because they are not commensurate with the claim language. There is nothing recited in the claim about doing something *at a centralized location*, as Patent Owner’s arguments imply. Claim 1 recites three steps but does not specify the structure that performs the steps or where that structure is located. There is no valid basis for construing claim 1 to require performance of any of its steps at a centralized location.

In an attempt to draw a contrast with Kim, Patent Owner cites an embodiment described in the ’664 patent, in which “the communication system includes an IP network 20 coupled to a UMS element,” wherein the “UMS [element] controls the relative volume of each media stream, which are [sic] streamed to the management center.” PO Resp. 50 (citing Ex. 1001, 2:37–40, 5:36–52). In that embodiment, the ’664 patent explicitly states that “the provisioning is being done ***externally***, and the individual endpoints do not have to be capable of managing these alert messages.” *Id*. at 50–51 (quoting Ex. 1001, 5:50–52). “By contrast, [Patent Owner argues,] *Kim’s* television is an endpoint that does not adjust how a media stream is provisioned to either itself or other endpoints.” *Id*. at 51.

We are not persuaded by this argument because, unlike the cited embodiment from the specification, claim 1 does not specify that the media stream is provisioned *externally*. Further, as Petitioner points out, the fact that the '664 patent describes an embodiment in which "the provisioning is being done externally, and the individual endpoints do not have to be capable of managing these alert messages," (Ex. 1001, 5:50–52), does not support limiting the claims to that embodiment, as would be the case with Patent Owner's construction. Pet. Reply. 20–21. We agree with Petitioner. That the specification describes an embodiment in which "the provisioning is being done externally" (Ex. 1001, 5:50–52), suggests that a generic reference to provisioning (or "is provisioned," as claim 1 recites) would not be limited to provisioning *externally*. *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) ("To take a simple example, the claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel.").

In sum, we are not persuaded by Patent Owner's argument that claim 1 requires an adjustment made to how the media stream is provisioned *externally* to an endpoint in the communication environment. Such a construction is inconsistent with the broader language recited in claim 1.

We now turn to Patent Owner's related argument about the meaning of "endpoint" and its application to Kim. Implicitly construing the claim language, Patent Owner argues that, in claim 1, "[b]ecause the adjustment is made to how the media stream is provisioned ***to*** the endpoint, the adjustment must occur before the endpoint receives the media stream. Otherwise, the system could not adjust how the media stream is provisioned to the endpoint." PO Resp. 50 (citing Ex. 2005 ¶¶144–145). Patent Owner argues

that the television in Kim is the endpoint and, thus, any adjustment Kim does in response to an alert it receives would not be an adjustment "made to how the media stream is provisioned to an endpoint in the communication environment," as recited in claim 1. *See, e.g.*, PO Resp. 48 ("*Kim* is a television endpoint that ***reacts*** to received broadcast television signals by adjusting endpoint settings; *Kim* does not have any control over the broadcast television signals themselves and how the broadcast signals are provisioned ***to*** the endpoint (the television)."), 49–50 ("Because *Kim's* television does not transmit the television broadcast signal to other endpoints, in essence, the Petition contends that the television's controller adjusts how the broadcast media is provisioned to itself."); Tr. 32:19–21 ("[T]he endpoint in Kim is the television, and the thing doing all of the alleged steps in Kim would be the television. So, it's not provisioning it to an endpoint. It's receiving something and displaying it differently.").

All of these arguments, however, are premised on an erroneous construction of claim 1 as well as an erroneously simplistic view of Kim's television.

As to the former, Patent Owner argues that, "[b]ecause the adjustment is made to how the media stream is provisioned ***to*** the endpoint, the adjustment must occur before <u>the endpoint</u> receives the media stream." PO Resp. 50 (underlining added). We agree with this argument in so far as step [b] (the "receiving" step) must be performed ahead of step [c] (the "elevating" step). However, we disagree with Patent Owner's argument that step (b) specifies *what* receives the media stream, let alone that it be the same "endpoint" that is recited in step (c). In other words, there is no requirement in claim 1 for an adjustment to be made to how the media

stream is provisioned to an endpoint that has already received the media stream. Rather, claim 1 encompasses an adjustment that is made to how the media stream is provisioned to *any* endpoint in the communication environment.

As to Kim, Patent Owner concedes that its television is an end-user device or endpoint. *See* PO Resp. 48 ("*Kim* is a television endpoint.). However, Patent Owner provides an erroneously simplistic view of the television as being a figurative black box. In reality, Kim describes a "TV system" that comprises numerous components, with media streams being received by certain components and media streams being provisioned to certain other components. Ex. 1008, 5:18. For example, Figure 5 of Kim, which is reproduced above in section II.E.(1), includes first and second broadcast signal receivers 10 and 15 for receiving television broadcast signals, including emergency-warning broadcast signals. *Id*. at 20:9–14, Fig. 5. Kim's TV system also includes controller 70, which makes adjustments to how media streams are provisioned to audio signal generator 50 and video signal generator 30. Kim teaches that "the emergency-warning broadcast signals propagated over the second broadcast signal receiver 15 can be propagated to TV viewers by means of individual switching units 110, 120, 130, and 140." Ex. 1008, 23:11–14. Specifically, they are propagated to viewers visually via a display (e.g., cathode ray tube) and audibly via a speaker. *See, e.g., id*. at 10:19–20 ("The video signal generator 30 includes a CRT (Cathode Ray Tube) driver and a CRT."), 10:21–24 ("An audio signal processor 40 processes and outputs the audio signal separated by the broadcast signal receiver 10 in the form of predetermined R/L signals transmittable over a speaker.").

We discern no basis for construing "endpoint" as excluding the speaker or display of Kim's TV system. Indeed, Patent Owner's declarant, who is one of the two named inventors of the '664 patent, testified on cross-examination that an endpoint could be a "screen" or a "speaker." Ex. 1042, 75:5–15.[9]

Kim discloses elevating a priority associated with the media stream receiving the alert (emergency-warning broadcast signal) such that an adjustment is made to how the media stream is provisioned to an endpoint in the communication environment, specifically the speaker and the display of Kim's TV system. The adjustments disclosed by Kim are turning on the TV (which would include its display and speaker components), tuning to the prescribed channel (affecting both the display and speaker), increasing the volume output by the speaker, and processing captions for the display. Ex. 1008, 3:22–23, 14:7, Fig. 3.

We have reviewed both parties' arguments and evidence, and we determine that Petitioner has proven, by a preponderance of the evidence, that claim 1 is unpatentable as obvious over Kim.

3. Independent Claims 11 and 16

Independent claims 11 and 16 are similar to claim 1, except they lack a limitation [c']. Ex. 1001, 8:65–9:5 (claim 11), 9:21–10:8 (claim 16). Other than generic computer components recited in claim 16, claims 11 and

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[9] During the hearing, counsel for Patent Owner suggested that Mr. Shaffer was "confused" about the question that led to his testimony that an endpoint could be a speaker or a screen. Tr. 35:1–16. We do not find that explanation sufficient to ignore or discount Mr. Shaffer's clear testimony that screens and speakers can be endpoints. Ex. 1042, 75:5–15.

16 do not include any subject matter beyond that which is recited in claim 1. In other words, claims 11 and 16 are broader than claim 1. Petitioner argues that claims 11 and 16 are unpatentable over Kim for the same reasons claim 1 is. *See* Pet. 77–79. Patent Owner does not present any arguments for claims 11 and 16 being patentable over Kim beyond what it argues unpersuasively for claim 1.

Accordingly, for essentially the same reasons as for claim 1, we determine that Petitioner has proven, by a preponderance of the evidence, that claims 11 and 16 are unpatentable as obvious over Kim.

4. Dependent Claims 2, 6–9, 12, 15, 17, and 20

These claims all depend directly from one of claims 1, 11, or 16. Ex. 1001, 8:40–10:22. We address each below.

a) Claim 2

Claim 2 recites: "The method of claim 1, wherein elevating the priority comprises increasing the volume of the media stream receiving the alert." Ex. 1001, 8:40–42. Petitioner asserts that this feature is satisfied by Kim's teaching of increasing the volume on the television speaker when an emergency-warning broadcast signal is being broadcast, which feature we have already discussed above. *See* Pet. 72–73 (referring back to its analysis for claim 1); *see also* Pet. 71 (citing Ex. 1008, 27:16–17, Fig. 3). We are persuaded that Kim teaches such a feature.

Patent Owner does not present any arguments as to claim 2 beyond those presented for claim 1. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claim 2 would have been obvious over Kim.

b) Claim 6

Claim 6 recites: "The method of claim 1, wherein elevating the priority includes identifying a primary channel and rendering the alert message to the primary channel." Ex. 1001, 8:53–55. Petitioner asserts that this feature is taught by Kim in that, "even if 'the TV viewer currently views and listen[s] to a TV program of another channel, he or she can quickly receive the emergency-warning broadcast signal via a dedicated emergency-warning broadcast tuner.'" Pet. 73–74 (quoting Ex. 1008, 29:16–19). For example, as argued by Petitioner, "[i]f the channel 's' starts broadcasting an emergency-warning broadcast program' while a viewer is watching 'a TV program of the channel 'r', the broadcasting station changes the channel code 'r' to the other channel code 's' in such a way that it can compulsorily control the TV viewer of the channel ['']r' to view the emergency-warning broadcast program of the channel 's'." *Id*. at 74 (quoting Ex. 1008, 30:4–11). We are persuaded that Kim teaches such a feature.

Patent Owner does not present any arguments as to claim 6 beyond those presented for claim 1. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claim 6 would have been obvious over Kim.

c) Claim 7

Claim 7 recites: "The method of claim 1, wherein elevating the priority includes turning a volume down on media streams not receiving the alert." Ex. 1001, 8:56–58. Petitioner asserts that this feature is satisfied by Kim's changing of "the channel code 'r' to the other channel code 's' . . . to view the emergency-warning broadcast program," which "effectively turn[s]

the volume of channel 'r' to zero." Pet. 74 (quoting Ex. 1008, 30:4–13). We are persuaded that Kim teaches such a feature.

Patent Owner does not present any arguments as to claim 7 beyond those presented for claim 1. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claim 7 would have been obvious over Kim.

d) Claim 8

Claim 8 recites: "The method of claim 1, wherein the alert is received in a header of a packet of the media stream." Ex. 1001, 8:59–60. Petitioner asserts that this feature is satisfied by Kim's teaching of "an 'emergency-warning broadcast signal' broken into its 'predetermined units (i.e., packets)'" as illustrated in Figure 1 of Kim. Pet. 75 (citing Ex. 1008, 7:7–9, 3:21–4:3, 29:20–21, Fig. 1). Petitioner further explains that one of the predetermined units contains an "emergency-warning broadcast start code" (the alert) in a header packet, which indicates an emergency-warning broadcast in a digital broadcast signal composed of data streams. *Id*. at 76 (citing Ex. 1008, Fig. 1). We are persuaded that Kim teaches such a feature.

Patent Owner does not present any arguments as to claim 8 beyond those presented for claim 1. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claim 8 would have been obvious over Kim.

e) Claim 9

Claim 9 recites: "The method of claim 1, wherein the alert is received in a control packet of the media stream." Ex. 1001, 8:61–62. Petitioner asserts that this feature is satisfied by Kim because the "alert packet contains

'data with emergency-warning broadcast control information.'" Pet. 76 (quoting Ex. 1008, 4:2–3). Petitioner also points out that Kim illustrates controls packets as "control codes" in Figure 1. *Id*. (citing Ex. 1008, Fig. 1). We are persuaded that Kim teaches such a feature.

Patent Owner does not present any arguments as to claim 9 beyond those presented for claim 1. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claim 9 would have been obvious over Kim.

f) Claims 12 and 17

Claims 12 and 17 depend, respectively, from independent claims 11 and 16. Ex. 1001, 9:6–8 (claim 12), 10:9–11 (claim 17). Claims 12 and 17 each recite the same additional limitation as claim 2, namely "wherein elevating the priority comprises increasing the volume of the media stream receiving the alert." *Compare* Ex. 1001, 8:40–42 (claim 2)*, with id*. at 9:6–8 (claim 12)*, with id*. at 10:9–11 (claim 17). Accordingly, Petitioner relies on the same analysis for claims 12 and 17. *See* Pet. 79 (referring back to its claim 2 analysis). As discussed above, we find Petitioner's arguments persuasive that Kim teaches such a feature.

Patent Owner does not present any arguments as to claims 12 and 17 beyond those presented for any of the independent claims. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claims 12 and 17 would have been obvious over Kim.

g) Claims 15 and 20

Claims 15 and 20 depend, respectively, from independent claims 11 and 16. Ex. 1001, 9:18–20 (claim 15), 10:19–21 (claim 20). Claims 15 and

20 each recite the same additional limitation as claim 6, namely "wherein elevating the priority includes identifying a primary channel and rendering the alert message to the primary channel." *Compare* Ex. 1001, 8:53–55 (claim 6)*, with id*. 9:18–20 (claim 15)*, with id*. 10:19–21 (claim 20). Accordingly, Petitioner relies on the same analysis for claims 15 and 20. *See* Pet. 79 (referring back to its claim 6 analysis). As discussed above, we find Petitioner's arguments persuasive that Kim teaches such a feature.

Patent Owner does not present any arguments as to claims 15 and 20 beyond those presented for any of the independent claims. PO Resp. 47–57.

Petitioner has shown by a preponderance of the evidence that claims 15 and 20 would have been obvious over Kim.

F. Ground 8 (Kim and Ishibashi)

Petitioner's Ground 8 contends that claims 3–5, 13–14, and 18–19 would have been obvious over Kim and Ishibashi. Pet. 2.

1. Summary of Ishibashi (Ex. 1009)

Ishibashi is a Japanese patent publication, the title of which has been translated as "Emergency-Alert Broadcast Receiver and Method for Receiving Emergency-Alert Broadcasts." Ex. 1009, code (54). Ishibashi was filed June 3, 2005, and published December 14, 2006. *Id*., codes (22), (43). Thus, Ishibashi is prior art to the challenged claims under 35 U.S.C. §§102(a) and (b). *See* Ex. 1001, code (63) (identifying December 19, 2008, as the earliest possible effective filing date of the challenged claims).

Ishibashi discloses "an emergency-alert broadcast receiver that automatically switches the audio output to the loudspeaker upon receipt of an emergency-alert broadcast." Ex. 1009 ¶1. Ishibashi explains that the use

of headphones to view videos risks the viewer not receiving or hearing an emergency-alert audio broadcast. *Id*. ¶4. This is so because "once headphones or earphones are plugged into a jack, the loudspeaker is mechanically disconnected so that no sound is output through the loudspeaker" of the video output device. *Id*. Ishibashi's invention, however, "allows the audience to hear the sound of an emergency-alert broadcast upon its receipt, even when the audience has forgotten to unplug their headphones or earphones from the jack after viewing and/or listening to a broadcast, etc., with the headphones or earphones." *Id*. ¶5.

When an "emergency-alert-broadcast activation flag" (*id*. ¶2) is received, Ishibashi teaches "adjust[ing] the audio output to the maximum volume," and routing the audio data "to be output through both the [] loudspeaker and the [] jack," during an emergency-alert broadcast. *Id*. ¶6.

2. Combination of Kim and Ishibashi

Petitioner argues that both references are from the same field of endeavor as the '664 patent, namely emergency communication systems. Pet. 80 (citing various portions of Exhibits 1001, 1008, and 1009). We are persuaded of this fact, which, in any event, Patent Owner does not dispute. *See* PO Resp. 57 (arguing against Ground 8 solely on the basis of its Ground 7 arguments).

Petitioner argues that a person of ordinary skill in the art would have combined Kim and Ishibashi because the former teaches "that a goal of emergency warning broadcast systems is to ensure that the viewer receives the emergency warning information" and the latter teaches a means to achieving that goal. Pet. 80–81 (citing Ex. 1008, 3:13–19; Ex. 1002 ¶304;

Ex. 1009 ¶¶5, 15, 17). More specifically, Petitioner argues that a person of ordinary skill in the art "would have been motivated to implement Ishibashi's audio output-switchover circuit in Kim's controller system . . . to ensure that an emergency warning broadcast is received by the viewer even in situations where a headphone jack is left plugged in but unattended (e.g., not being worn) by the viewer." Pet. 81 (citing Ex. 1002 ¶305). Petitioner argues that the skilled artisan would have had a reasonable expectation of success in making such a combination and the result would have been predictable. *Id*. at 82 (citing Ex. 1002 ¶306). We are persuaded by Petitioner's stated reasons for the combination as well as that there would have been a reasonable expectation of success in making the combination. Further, Patent Owner does not dispute these factual assertions underlying the obviousness analysis. PO Resp. 57.

We turn now to application of the proposed combination to the challenged claims.

3. Claims 3 and 5

Claim 3 recites: "The method of claim 1, wherein elevating the priority comprises changing a spatial direction for rendering the media stream receiving the alert." Ex. 1001, 8:43–45. Similarly, claim 5 recites: "The method of claim 1, wherein elevating the priority comprises rendering the media stream receiving the alert to a priority spatial direction." *Id*. at 8:50–52. Petitioner asserts that these features are satisfied by the proposed combination because the switching of audio from the headphones to the loudspeaker when an emergency alert is received, as taught by Ishibashi,

constitutes a change in the spatial direction to a priority spatial direction. Pet. 83–85; Ex. 1009 ¶¶5–6.

We are persuaded that Kim in view Ishibashi teaches such features.

Patent Owner does not present any arguments as to claims 3 and 5 beyond those presented for claim 1 in Ground 7. PO Resp. 57.

Petitioner has shown by a preponderance of the evidence that claims 3 and 5 would have been obvious over Kim and Ishibashi.

4. Claim 4

Claim 4 recites: "The method of claim 1, wherein elevating the priority comprises increasing the volume of the media stream receiving the alert and changing a spatial direction for rendering the media stream receiving the alert." Ex. 1001, 8:46–49.

Petitioner asserts that these features are satisfied by the proposed combination because Ishibashi teaches, when an emergency alert is received, both the switching of audio from the headphones to the loudspeaker and increasing the volume to the maximum. Pet. 85 (citing Ex. 1002 ¶¶313–314); *see also* Pet. 20 (citing Ex. 1009 ¶6).

We are persuaded that Kim in view Ishibashi teaches such a feature.

Patent Owner does not present any arguments as to claim 4 beyond those presented for claim 1 in Ground 7. PO Resp. 57.

Petitioner has shown by a preponderance of the evidence that claim 4 would have been obvious over Kim and Ishibashi.

5. Claims 13 and 18

Claims 13 and 18 depend, respectively, from independent claims 11 and 16. Ex. 1001, 9:9–11 (claim 13), 10:12–14 (claim 18). Claims 13 and

18 each recite the same additional limitation as claim 3, namely "wherein elevating the priority comprises changing a spatial direction for rendering the media stream receiving the alert." *Compare* Ex. 1001, 8:43–45 (claim 3)*, with id*. at 9:9–11 (claim 13)*, with id*. at 10:12–14 (claim 18). Accordingly, Petitioner relies on the same analysis for claims 13 and 18. *See* Pet. 85–86 (referring back to its claim 3 analysis). As discussed above, we find Petitioner's arguments persuasive that Kim in view of Ishibashi teaches such a feature.

Patent Owner does not present any arguments as to claims 13 and 18 beyond those presented for any of the independent claims in Ground 7. PO Resp. 57.

Petitioner has shown by a preponderance of the evidence that claims 13 and 18 would have been obvious over Kim and Ishibashi.

6. Claims 14 and 19

Claims 14 and 19 depend, respectively, from independent claims 11 and 16. Ex. 1001, 9:12–16 (claim 14), 10:15–18 (claim 19). Claims 14 and 19 each recite the same additional limitation as claim 4, namely "wherein elevating the priority comprises changing a spatial direction for rendering the media stream receiving the alert." *Compare* Ex. 1001, 8:46–49 (claim 4)*, with id*. at 9:12–16 (claim 14)*, with id*. at 10:15–18 (claim 19). Accordingly, Petitioner relies on the same analysis for claims 14 and 19. *See* Pet. 85–86 (referring back to its claim 4 analysis). As discussed above, we find Petitioner's arguments persuasive that Kim in view of Ishibashi teaches such a feature.

Patent Owner does not present any arguments as to claims 14 and 19 beyond those presented for any of the independent claims in Ground 7. PO Resp. 57.

Petitioner has shown by a preponderance of the evidence that claims 14 and 19 would have been obvious over Kim and Ishibashi.

G. Ground 9 (Kim and Goss)

Petitioner's Ground 9 contends that claim 10 would have been obvious over Kim and Goss. Pet. 2.

1. Summary of Goss (Ex. 1010)

Goss is titled "Broadcast Channels for Wireless Telephony." Ex. 1010, code (54). Goss was filed September 17, 1999, and issued February 12, 2008. *Id*., codes (22), (45). Thus, Goss is prior art to the challenged claims under 35 U.S.C. §§ 102(a) and (e). *See* Ex. 1001, code (63) (identifying December 19, 2008, as the earliest possible effective filing date of the challenged claims).

Goss discloses "broadcast capabilities and messaging services that enable a live or recorded message to be broadcast to a plurality of users," such as "weather broadcasts" and "emergency bulletins." Ex. 1010, 17–9, 1:34–37. Goss further discloses that "[b]roadcast announcement messages may be retransmitted from time to time to alert users who did not receive the message when first transmitted." *Id*. at 6:4–7.

2. Combination of Kim and Goss

Petitioner argues that both references are from the same field of endeavor as the '664 patent, namely emergency communication systems.

Pet. 86 (citing various portions of Exhibits 1001, 1008, and 1010). We are persuaded of this fact, which, in any event, Patent Owner does not dispute. *See* PO Resp. 57–58 (arguing against Ground 9 solely on the basis of its Ground 7 arguments).

Petitioner argues that a person of ordinary skill in the art would have combined Kim and Goss because the former teaches "that a goal of emergency warning broadcast systems is to ensure that the viewer receives the emergency warning information" and the latter teaches a means to achieving that goal. Pet. 87 (citing Ex. 1008, 3:13–19; Ex. 1002 ¶¶326–327; Ex. 1010, 6:4–7, 7:55–57). More specifically, Petitioner argues that a person of ordinary skill in the art "would have been motivated to implement Goss's retransmissions in Kim's emergency warning system to improve the likelihood that an emergency warning broadcast is received by the viewer." Pet. 87–88 (citing Ex. 1002 ¶328). Petitioner argues that the skilled artisan would have had a reasonable expectation of success in making such a combination and the result would have been predictable. *Id*. at 88 (citing Ex. 1002 ¶329). We are persuaded by Petitioner's stated reasons for the combination as well as that there would have been a reasonable expectation of success in making the combination. Further, Patent Owner does not dispute these factual assertions underlying the obviousness analysis. PO Resp. 57.

We turn now to application of the proposed combination to claim 10.

3. Claim 10

Claim 10 recites: "The method of claim 1, wherein the alert is duplicated and rendered at a higher volume." Ex. 1001, 8:63–64.

Petitioner asserts that these features are satisfied by the proposed combination of Kim and Goss. As for the "duplicated" alert feature, Petitioner directs us to Goss's teaching that "[b]roadcast announcement messages," such as emergency bulletins, "may be retransmitted from time to time to alert users who did not receive the message when first transmitted." Pet. 88 (quoting Ex. 1010, 6:4–7). Petitioner further points out that "Goss accomplishes this by 'repeatedly transmitting an alert message on a periodic basis while said broadcast message is transmitted.'" *Id*. at 88–89 (quoting Ex. 1010, 11:26–29). As for the "higher volume" feature, Petitioner directs us to Kim's teaching of increasing the volume on the television speaker when an emergency-warning broadcast signal is being broadcast. Pet. 89 (referring back to its analysis for claim 2); *see also* Pet. 71 (citing Ex. 1008, 27:16–17, Fig. 3).

We are persuaded that Kim and Goss teach these features.

Patent Owner does not present any arguments as to claim 10 beyond those presented for claim 1 in Ground 7. PO Resp. 57–58.

Petitioner has shown by a preponderance of the evidence that claim 10 would have been obvious over Kim and Goss.

III. CONCLUSION

A preponderance of the evidence shows that claims 1–20 are unpatentable. In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–6, 8, 9, 11–20	103(a)	Downs, EDACS		

1–6, 8, 9, 11–20	103(a)	Downs, EDACS, Childress		
3–5, 13, 14, 18, 19	103(a)	Downs, EDACS, Hancock		
3–5, 13, 14, 18, 19	103(a)	Downs, EDACS, Childress, Hancock		
7, 10	103(a)	Downs, EDACS, Reich		
7, 10	103(a)	Downs, EDACS, Childress, Reich		
1, 2, 6–9, 11, 12, 15–17, 20	103(a)	Kim	1, 2, 6–9, 11, 12, 15–17, 20	
3–5, 13, 14, 18, 19	103(a)	Kim, Ishibashi	3–5, 13, 14, 18, 19	
10	103(a)	Kim, Goss	10	
Overall Outcome			1–20	

IV. ORDER[10]

In consideration of the foregoing, it is hereby

ORDERED that claims 1–20 of U.S. Patent No. 8,831,664 B2 are unpatentable;

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[10] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial on the grounds of unpatentability authorized above; the trial commences on the entry date of this decision.

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Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).