

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LINKPLAY TECHNOLOGY INC.

Petitioner

v.

SONOS, INC.

Patent Owner

IPR2025-00510

U.S. PATENT NO. 10,541,883

**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO.
10,541,883**

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LIST OF EXHIBITS

<u>Exhibit</u>	<u>Description</u>
EX1001	U.S. Patent No. 10,541,883 (“the ’883 Patent”)
EX1002	Prosecution History of the ’883 Patent
EX1003	Declaration of Dr. Bruce Hartpence
EX1004	U.S. Patent App. Pub. No. US 2003/0212802 (“Rector”)
EX1005	U.S. Patent App. Pub. No. US 2003/0083024 (“Richenstein”)
EX1006	U.S. Patent App. Pub. No. US 2003/0092395 (“Gassho”)
EX1007	U.S. Patent App. Pub. No. US 2002/0174243 (“Spurgat”)
EX1008	IEEE Std 802.15.1™-2002
EX1009	Specification of the Bluetooth System: Covered Core Package version: 1.2 (“Bluetooth Standard”)
EX1010	Infrared Data Association: Plug and Play Extensions to Link Management Protocol Version 1.1 (“IR Standard”)
EX1011	IEEE 802.11 Standard 1999 (“802.11 Standard”)
EX1012	Sonos v. Google (ITC) Claim Construction Order
EX1013	Universal Serial Bus Specification 2.0 (2000)
EX1014	Looking back at the ARPANET Effort (2003)
EX1015	The “Only” Coke Machine on the Internet
EX1016	Aspects of Data Acquisition System Design (1999)
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EX1019	A Technology Comparison, Memsen Corporation
EX1020	Konica Minolta Feb. 2003 Press Release
EX1021	Microtek Nov. 2002 Press Release
EX1022	Sony Jul. 2000 Announcement
EX1023	NEC Jan. 2003 Review
EX1024	RFC 1122
EX1025	RFC 1123
EX1026	RFC 793
EX1027	RFC 768
EX1028	Functional Requirements 6.8, IEEE Project 802 (1997)
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EX1030	MOST Specification Rev. 2.0 (“MOST”)
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EX1033	DocketNavigator Time to Trial Statistics (retrieved Jan. 28, 2025)

EX1034	Docket Sheet for Rail Assets v. Westinghouse - WDPa-2-19-cv-01636
EX1035	Docket Sheet for Samsung v. Technical Consumer Products - DDE-1-23-cv-00186
EX1036	Sonos v. Linkplay - D.I. 44 (Scheduling Order)
EX1037	Sonos v. Linkplay - D.I. 121 (Joint Stipulation)
EX1038	Sonos v. Linkplay - D.I. 122 (Order Granting Stipulation and Adjusting Schedule)
EX1039	EpsonNet 802.11b User Guide (2002)
EX1040	Docket Sheet for Sonos v. Google – CDCA-2-20-cv-00169 (retrieved Feb. 4, 2025)

I. INTRODUCTION

Linkplay Technology Inc. (“Petitioner”) petitions for *inter partes* review (“IPR”) of claims 1-20 (“challenged claims”) of U.S. Patent No. 10,541,883 (“’883 patent,” EX1001) assigned to Sonos, Inc. (“PO”).

The challenged claims recite device setup methods that had been well-known in the networking industry prior to the earliest possible priority date of the ’883 patent. Connecting a new device through a temporary path to an already connected device, which provides the network configuration parameters to the new device for the new device to connect to the same wireless network, are clearly and extensively disclosed in the art (e.g., EX1004-EX1007). The additional claim limitations merely represent routine operations for networked devices, all of which were known or obvious, as demonstrated by the cited prior art references.

Petitioner’s expert, Dr. Bruce Hartpence, who has decades of experience in information technology, confirms that the challenged claims are unpatentable over these references.

Petitioner thus respectfully requests the Board cancel the challenged claims.

II. RELIEF REQUESTED

A. Claims for Which Review Is Requested

Petitioner requests IPR and cancellation of challenged claims 1-20 of the ’883 patent under 35 U.S.C. § 311 based on the following grounds. This Petition is

supported by the Declaration of Dr. Bruce Hartpence (EX1003).

B. Statutory Grounds of Challenge

Petitioner relies on the following prior art and statutory grounds to challenge claims 1-20 of the '883 patent:

Name	Ex.	Publication No.	Filed	Published	Prior art under at least
Rector	1004	US2003/0212802	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
Richenstein	1005	US2003/0083024	7/3/2002	5/1/2003	§ 102(b)
Gassho	1006	US2003/0092395	11/7/2002	5/15/2003	§ 102(b)
Spurgat	1007	US2002/0174243	5/16/2001	11/21/2002	§ 102(b)

Ground	Claims	Basis	References
1	1-8, 10-12, 14-20	§ 102	Rector
2	1-8, 10-12, 14-20	§ 103	Rector
3	3, 7-11, 13, 19	§ 103	Rector in view of Richenstein
4	1-8, 12, 14-20	§ 102	Gassho
5	1-8, 12, 14-20	§ 103	Gassho
6	1-20	§ 103	Spurgat in view of Gassho

Richenstein (EX1005), Gassho (EX1006), and Spurgat (EX1007) were published more than one year before the date of application for the '883 patent, and therefore are prior art under at least 35 U.S.C. § 102(b).

Rector (EX1004) was filed and published prior to invention of the '883 patent and therefore is prior art under at least §§ 102(a) and (e).¹

¹ PO has alleged, but not proven, a conception date of March 11, 2004. Regardless of whether PO can carry its burden of production to prove such date in this IPR, Rector is still prior art under §§ 102(a) and (e). Additionally, Rector is also prior art under at least § 102(b) as the '883 patent is not entitled to at least the filing date of Provisional Application No. 60/577,284, June 5, 2004.

III. THE '883 PATENT

A. Overview

Before a consumer electronics device can communicate with other devices on a network, it needs to be “setup” with proper network parameters, and the setup process may be cumbersome to an average consumer. EX1001, 1:36-49. Purportedly to solve that problem, the '883 patent describes a process for configuring a new device with the necessary network parameters using another device that is already connected to the network. EX1001, 2:16-29.

The configuration process is usually initiated by a user. EX1001, 2:30-44. It includes establishing “a rudimentary communication path . . . initially . . . between one of the devices in the network” (“first device”) and the new device (“second device”),” which the first device uses to provide “necessary parameters (e.g., SSID), WEP security” to the second device, allowing it to connect to the network. EX1001, 2:21-27, 2:30-25, 2:45-50; EX1003, ¶56. The “rudimentary communication path” can be established after the first device “broadcasts a message including probing datagrams in compliance with the standard IP broadcast” and “the second device responds to the message from the first device.” EX1001, 2:30-35.

The disclosed configuration process is applicable to any type of “first device” (network-enabled device) and “second device” (new device to be added to the network), although the patent discloses that “one exemplary application of the present invention” is “for an audio system” where the “first device” can be a controller and the “second device” can be a zone player. EX1001, 2:45-3:10; 5:1-13, 5:35-40, EX1003, ¶57.

For example, FIG. 3A of the '883 patent shows three zone players 302, 304, and 306 and a controller 308 that form an Ad-Hoc network 310 (referred to as HOUSEHOLD). EX1001, 9:1-9, FIGs. 3A; EX1003, ¶58. HOUSEHOLD is disclosed to be “a local area network or other small network in which there is no one access point for all traffics” and thus devices on HOUSEHOLD “all communicate with each other in ‘peer-to-peer’ style.” EX1001, 9:3-11, 1:56-67 (distinguishing Ad-Hoc network from Access Point (infrastructure) network). Network 310 may be characterized by a unique HHID and a unique set of configuration parameters, such as Channels, SSID, and WEP keys. EX1001, 9:28-36. EX1003, ¶60.

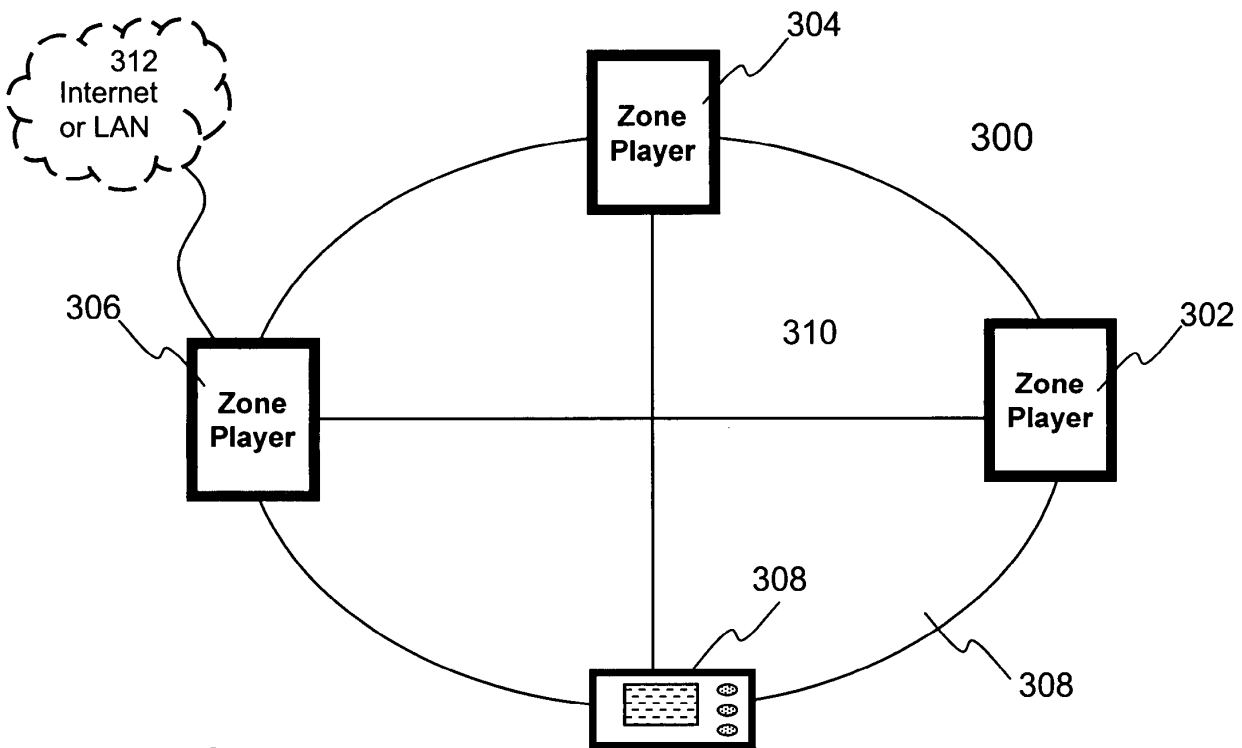


FIG. 3A

EX1001, FIG. 3A

The '883 patent discloses that the controller (CP) can facilitate a new zone player (ZP) to “execute a household join process to join the HOUSEHOLD,” as shown in FIG. 3B. EX1001, 16:31-34, FIG. 3B, FIGs. 4A-4B. Specifically, when a reset or two buttons are pushed on the zone player, the zone player starts “scanning,” *i.e.*, sending an “Alive” message on each channel in turn (channel cycling), until the zone player receives a QueryNetParams request on one of the channels, to which it then locks on. EX1001, 13:43-56, 16:31-45, 17:25-38, FIG. 3B (351 and 352). As shown in FIG. 3B, the CP and ZP continue exchanging messages over the

QueryNetParams channel after locking onto it, including RespondNetParams, SetNetParams from CP to ZP sending the network parameters, and AckNetParams from ZP to CP indicating the parameters are received. EX1001, 13:56-14:30, 16:31-45, 17:33-38, FIG. 3B (353-355). After configuration, ZP joins the Ad-Hoc network (HOUSEHOLD) using the new network configuration parameters. EX1001, 14:31-35; EX1003, ¶69.

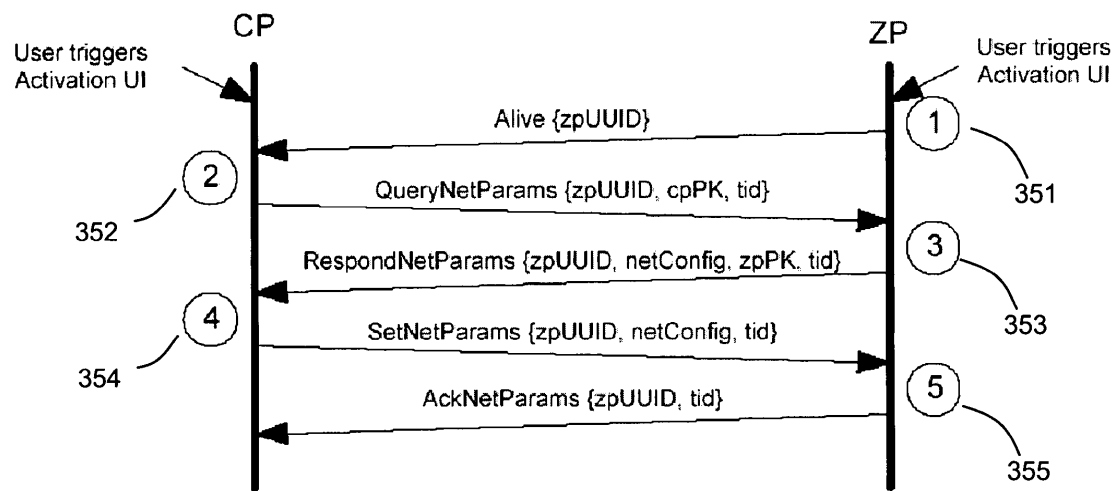


FIG. 3B

EX1001, FIG. 3B

The '883 patent also mentions that, “[i]n one case,” the controller or the zone player can be an “access device” that “is coupled to an access point of a LAN” with wired interface 217 while communicating with the other zone players on the Ad-Hoc network wirelessly through wireless interface 216. EX1001, 6:53-7:2; *see also* EX1001, 2:54-58, 3:31-54, FIG. 3A (zone player 306 being coupled to Internet or

LAN 312); EX1003, ¶70. That way, “these other zone players may communicate with other devices on a [Ad-Hoc] network or retrieve audio sources via the access zone player [from the LAN].” EX1001, 6:57-7:2; EX1003, ¶70. The ’883 patent does not disclose or otherwise describe that a new zone player device joins a wireless LAN defined by an access point (“infrastructure” WLAN), using configuration parameters provided by a controller already coupled to such an infrastructure WLAN. EX1003, ¶70.

B. Prosecution History

The ’883 patent was filed as a continuation application. EX1002, 797. In the first Office Action, the Examiner rejected all claims 1-20 on the ground of nonstatutory double patenting over co-pending Application No. 16/298,542, now U.S. Patent No. 10,439,896 (“the ’896 patent,” EX1029), rejected claims 1, 2, 4-6, 12, 14-18 and 20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Pub. No. 2004/0168081 (“Ladas”), and remaining claims under 35 U.S.C. §103(a). EX1002, 189-209. In response, PO filed a terminal disclaimer against the ’896 patent, and amended the claims to essentially narrow the claim scope from a WLAN to a WLAN “defined by an access point” (“infrastructure” WLAN) and to require that the “the initial communication path with the computing device does not traverse the access point.” EX1002, 166-170, 173-185.

PO argued that amended claim 1 requires a “computing device,” different from the “access point” defining a WLAN, to provide network configuration parameters of the WLAN to a new device, via a path that “does not traverse the access point,” while Ladas uses the access point to perform an otherwise identical setup process. EX1002, 183-184. The Patent Office issued the Notice of Allowance thereafter. EX1002, 110-117.

C. The Level of Ordinary Skill in the Art

A person of ordinary skill in the art (POSITA) at the time of the claimed invention would have had a Bachelor’s degree in electrical engineering, computer engineering, computer science, information technology, or a related field, along with at least two years of experience in the design or development of connected consumer electronics, networked engineering, or the equivalent. EX1003, ¶17. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. EX1003, ¶17.

IV. CLAIM CONSTRUCTIONS

Claim terms subject to IPR are construed under *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). 37 C.F.R. § 42.100(b). Only terms necessary to resolve the controversy need construction. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Because the prior art asserted herein discloses embodiments indisputably within the claims’ scope, the

Board need not construe the claims, and all claim terms should be interpreted according to their plain and ordinary meaning. EX1003, ¶73. No term of the '883 patent has been previously construed², and to the extent certain terms in the related '896 patent were construed by the International Trade Commission (ITC) in Inv. No. 337-TA-1191,³ Dr. Hartpence considered these previous constructions and confirms that the prior art asserted herein still discloses the relevant claim limitations even if the previous constructions are applied. EX1012; EX1003, ¶¶74-76.

**V. GROUNDS 1-2: RECTOR ANTICIPATES OR OTHERWISE
RENDERS OBVIOUS CLAIMS 1-8, 10-12, AND 14-20**

A. Overview of Rector

Rector relates to systems and methods to provide configuration and setup data for a new network device to join a network. EX1004, abstract; EX1003, ¶78. Similar to the '883 patent, Rector recognized that “[i]n order for devices to communicate on

² Claim construction in the parallel litigation involving the '883 patent has not begun, and decisions will not issue until after the institution decision in this IPR. To the extent necessary, Petitioner reserves the opportunity to address those constructions later in the trial phase.

³ Both the '896 patent and the '883 patent are purported continuations of Application No. 15/091,113, filed on Apr. 5, 2016, now U.S. Patent No. 10,979,310. Sonos asserted the '896 patent against Google in Inv. No. 337-TA-1191, in which the following claim terms were constructed by the ITC: “playback device,” “network interface,” “local area network,” “while operating . . . after receiving . . .,” “at least a second message containing network configuration parameters, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN,” and “security key.” The respective constructions are reflected in EX1012.

a wireless network, the devices must be configured with the correct communications parameters,” such as SSID, channel, and encryption key, and this setup process may be difficult for the user, especially for devices such as a “network audio device” that has no user interface. EX1004, [0005]; EX1003, ¶79. Rector solves this similar problem, with an approach identical to the ’883 patent—establishing a connection between the new network device and a setup device (already connected to the network), via which the setup device sends the new device any necessary configuration data for connecting to the network. EX1004, abstract, [0007]; EX1003, ¶¶79-81.

As shown in FIG. 2 of Rector below (annotated in EX1003), a device 112, such as an audio playback device, is to be added to a network 120 that is defined by gateway component 106. EX1004, [0015]-[0016] (gateway component 106, in pink box, can be a “wireless access point” and “supports wireless network connections 120.2”), [0020] (network device 112, in green box, can be “an audio device that receives data over a network and plays the audio data through loudspeakers”); EX1003, ¶82. To initiate setup, a user must bring network device 112 within proximity boundary 130 of a proximity setup component 108 (in blue box), and once detecting it in proximity, “proximity setup component establishes a network connection 202 with network device 112.” EX1004, [0023] (connection 202, in red

box, can be “an infra-red wireless connection” separate from network 120); EX1003, ¶¶83-84. Proximity setup component 108 then provides configuration and setup data, e.g., SSID, channel number used by gateway component 106, and the encryption key, to network device 112 via connection 202. EX1004, [0017], [0024]; EX1003, ¶85.

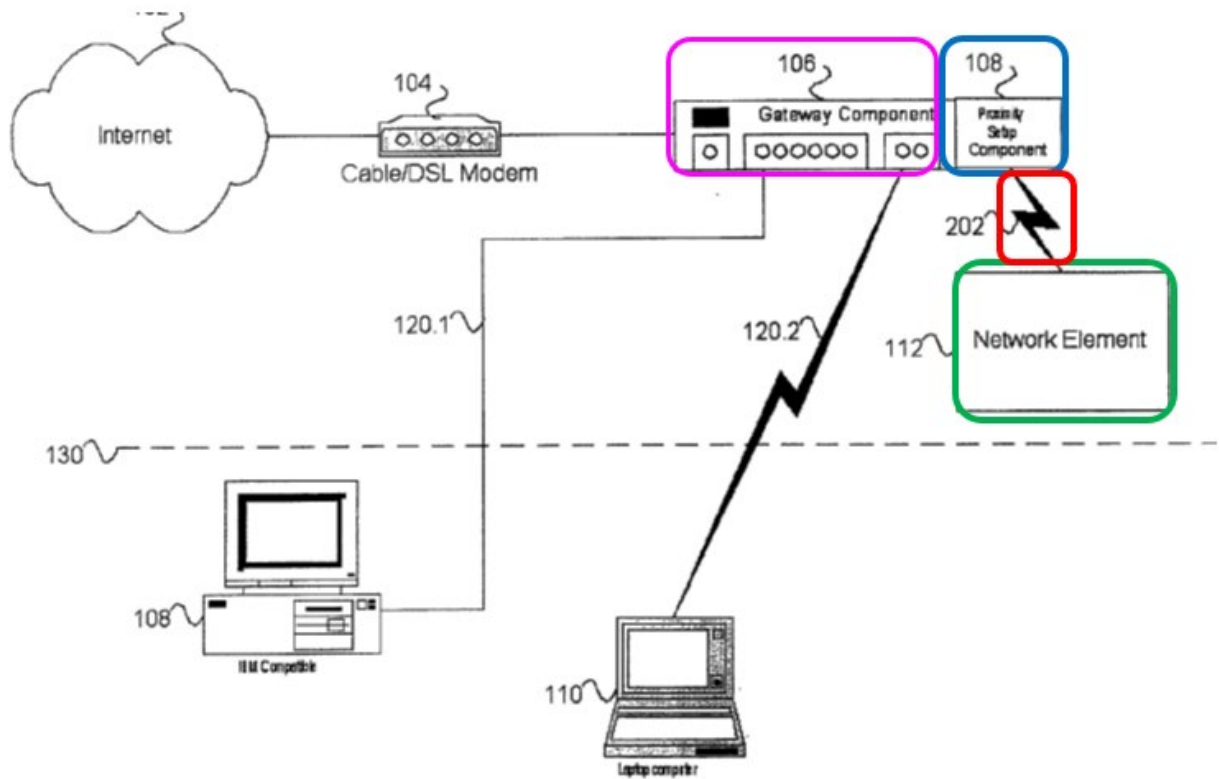
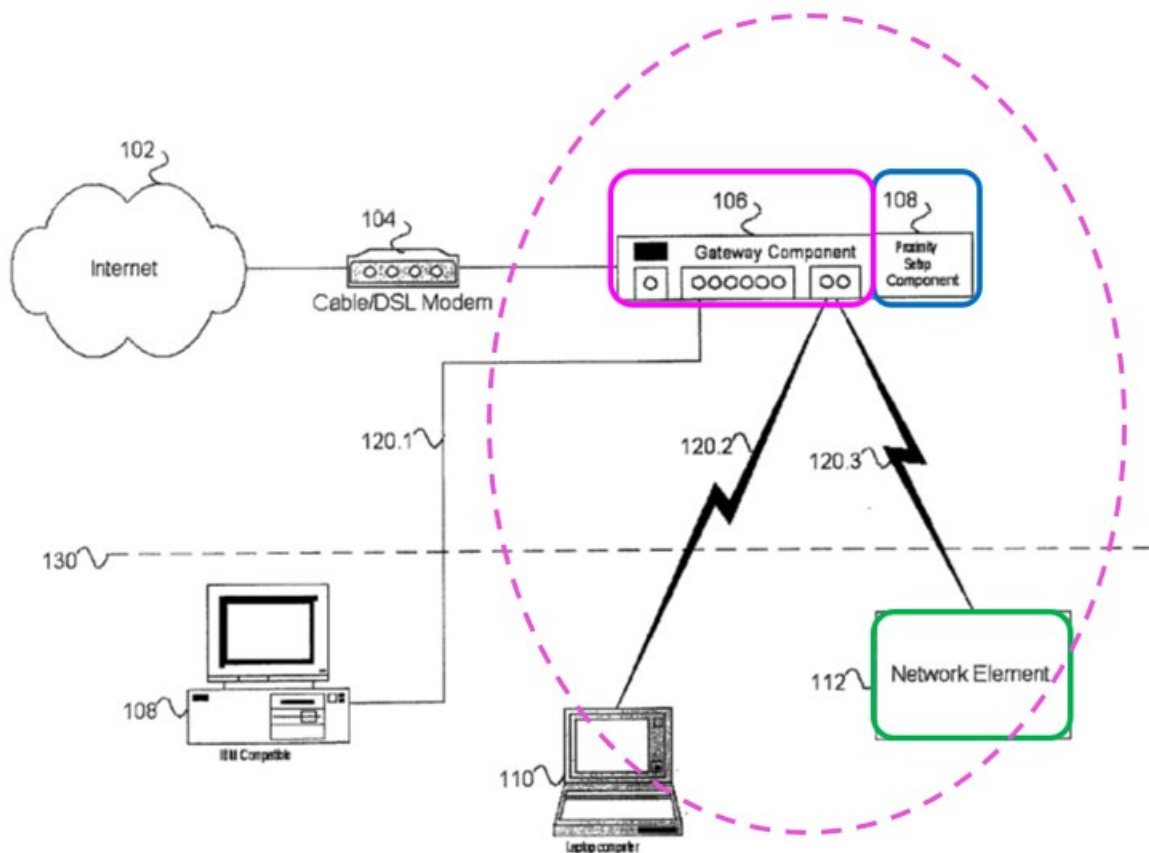


FIG. 2

EX1003, ¶84 — EX1004, FIG. 2 (Annotated)

These network configuration parameters allow network device 112 to connect to network 120. EX1004, [0024]. As shown in FIG. 3 (annotated in EX1003), Rector further discloses that “after network device 112 has received configuration and setup

information,” it may be “moved beyond proximity boundary 130,” so that it will disconnect from connection 202, and connect to the WLAN (in pink dashed-oval) to “communicate with any device on network 120.” EX1004, [0025]; EX1003, ¶85.



EX1003, ¶85 — EX1004, FIG. 3 (Annotated)

B. Independent Claim 1

1. Rector discloses “[a] playback device” [1.p].

Rector discloses [1.p] by disclosing a network device 112 that, in one embodiment, “comprises an audio device that receives data over a network and plays the audio data through loudspeakers” (“*playback device*”). EX1004, [0021]; *see also*

EX1004, [0003], [0005], FIG. 2; EX1003, ¶¶109-10.

2. Rector discloses “a network interface that is configured to provide an interconnection with at least one data network” [1.a].

Rector discloses [1.a] by disclosing that network device 112 can establish connections to components such as gateway component 106 and proximity setup component 108 through connections 120.3 and 120.2 (both “*data networks*”) and thus necessarily includes a *network interface* for establishing such connections. EX1004, [0021]; EX1003, ¶¶111-13. For example, network device 112 can be “an audio device that receives data over a network,” and it also receives network configuration parameters on connection 202. EX1004, [0021], [0024]. Rector further discloses that “a network interface,” such as an infra-red network interface or a radio frequency network interface, will be used “for establishing connections on a network.” EX1004, [0018]. Rector therefore discloses or at least suggests network device 112 has “*a network interface configured to provide an interconnection with at least one data network*” in [1.a]. EX1003, ¶¶111-13.

3. Rector discloses “at least one processor” [1.b], “a non-transitory computer-readable medium” [1.c], and “program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions” [1.d].

Rector discloses [1.b], [1.c], and [1.d] by disclosing that network device 112

as various types of electronic devices, such as an audio playback device, cell phones, PDAs, security systems, etc., each necessarily include a “*processor*,” “a *non-transitory computer readable medium*,” and “*program instructions*” for performing the various communication, data processing, and output functions. EX1004, [0021]; EX1003, ¶¶114-115. Rector further discloses that “computerized method,” such as the communication method of FIG. 4, where network device 112 participates on the receiving side, “is desirably realized at least in part as one or more programs running on a computer—that is, as a program executed from a computer-readable medium such as a memory by a processor of a computer.” EX1004, [0026]; *see also* EX1003, ¶116. Therefore, Rector discloses or at least suggests network device 112 also has all these disclosed components, including a “processor” ([1.b]), a “computer-readable medium” ([1.c]), and “programs running on the computer” ([1.d]), in order to perform computerized methods as an audio device. EX1003, ¶¶114-17.

4. Rector discloses “detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup” [1.e.1].

Rector discloses [1.e.1] by disclosing that network device 112 is powered on for setup within the proximity of boundary 130 (“*triggering event that causes the playback device to enter a setup mode*”) network device 112 transmits a message (“*first message*”) to proximity setup component 108 that indicates network device

112 is in proximity (“*available for setup*”). EX1004, [0022]-[0023], [0028]; EX1003, ¶119.

Rector discloses in order to setup network device 112, proximity setup device detects the presence of network device 112” and “Bluetooth technology is used by proximity setup component 108 and network device 112” for that detection. EX1004, [0023]; *see also*, EX1004, [0028]. A POSITA would know that for network device 112 to be detected using Bluetooth as explicitly specified by Rector, it necessarily needs to be powered on to send inquiries or pages, as defined in the Bluetooth Standard. EX1009, 1138-39; EX1003, ¶120. As shown in FIG. 2, network device needs to be “bought within proximity boundary 130,” and otherwise is “unable to communicate with proximity setup component 108” and thus not available for setup. EX1004, [0022], [0023], FIG. 2. A POSITA would understand network device 112 being bought into proximity and powered on for a secure network connection, as disclosed by Rector, to be necessary under the Bluetooth standards to cause the device to enter a setup mode. EX1003, ¶¶120.

In the setup mode, network device 112 and proximity setup component 108 exchange messages in order to establish network connection 202, which Rector characterizes as desirably “an infra-red wireless connection,” but can also be another type, such as Bluetooth. EX1004, [0023]; EX1003, ¶120. Regardless which protocol

is used for connection 202, a POSITA would have understood that network device 112 has to send an inquiry request (Bluetooth) or a “status” message (infra-red) (each “*first message*”) to the proximity setup component 108 to indicate network device 112 “*is available for setup.*” EX1003, ¶¶120-27; EX1004, [0023] (component 108 detects Bluetooth message from device 112), [0028]; EX1009, 127 (an “inquiring device” “actively sends inquiry requests” and a “discoverable device” “listen[s] for these inquiry requests and send[s] responses”), 111; EX1010, 5, 9 (“status” message “used by a device to convey status to the host at discovery time”).

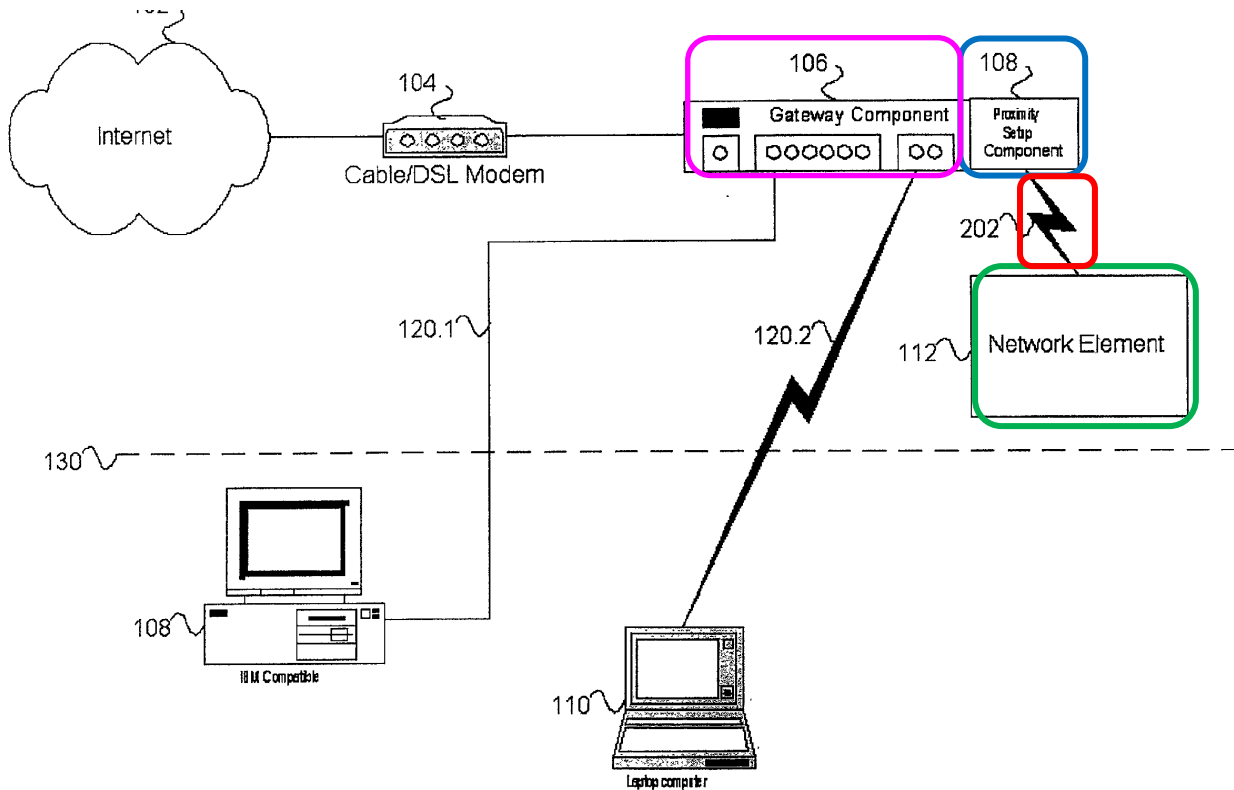


FIG. 2

EX1003, ¶120 — EX1004, FIG. 2 (Annotated)

5. **Rector discloses “while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device, wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, wherein the initial communication path with the computing device does not traverse the access point” [1.e.2].**

Rector discloses [1.e.2] by disclosing that “[u]pon detecting that network device 112 is in proximity, proximity setup component 108 establishes a network connection 202 with network device 112,” thus facilitating establishing connection 202 (“*initial communication path*”) between the “*computing device*” and the “*playback device*.” EX1004, [0023]; EX1003, ¶¶128-129.

Again, regardless whether Bluetooth or infra-red protocol is used for connection 202, both protocols require proximity setup component 108 to send a response to the inquiry request or the status message (“*a response to the first message*”), either using Bluetooth or infra-red, so that the network connection 202 can be established (“*facilitating an initial communication path*”). EX1003, ¶¶130-31; EX1009, 111, 127; EX1010, 5, 9. Thus, Rector discloses [1.e.2] at least inherently.

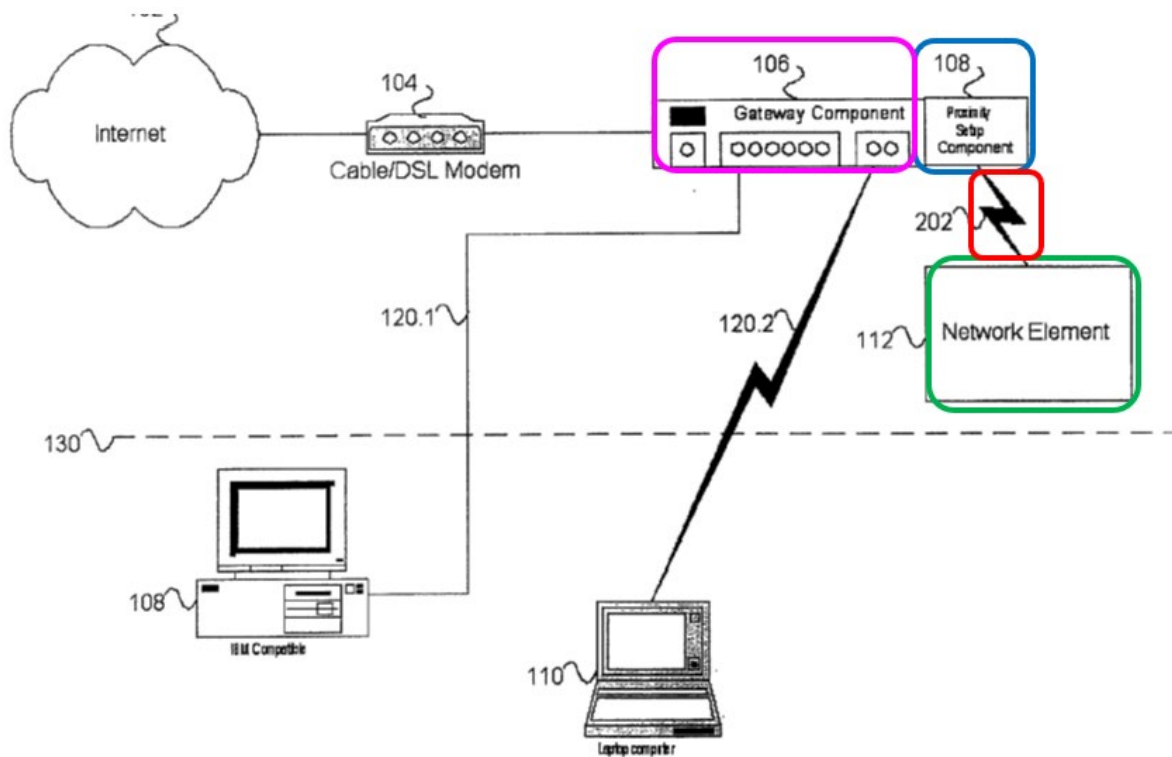


FIG. 2

EX1003, ¶131 — EX1004, FIG. 2 (Annotated)

To the extent the Board does not find the disclosure inherent, a POSITA would have found it obvious to transmit a response to network device 112, in light of the communication protocol Rector expressly references for establishing connection 202, because doing so would allow device 112 to obtain information regarding the device that detects it and will establish a direct connection with it, to further improve security in transmitting the network configuration parameters, a stated goal of Rector. EX1003, ¶132; EX1004, [0004].

Rector further discloses [1.e.2] by disclosing that proximity setup component

108 (“*computing device*”) is operating on local network 120, which includes wireless network connections 120.2, “a connection supporting the IEEE 802.11b protocol with encryption enabled,” and gateway component 106 can be a “router, wireless access point, or residential gateway” (“*a secure wireless local area network (WLAN) defined by an access point*”). EX1004, [0016]-[0017]; EX1003, ¶¶133-34.

Rector further discloses proximity setup component 108 to be a computer with processor and memory (“*computing device*”) and running programs to realize “computerized methods” to control network device 112 (“*application for controlling the playback device*”). EX1004, [0026], FIG. 4. Proximity setup component 108 operates on the LAN as it either integrates with gateway component 106 (FIG. 1A) or communicates with 106 “through a network such as network 120” (FIG. 1B). EX1004, [0007], [0020]; EX1003, ¶134. Rector also discloses that the connection 202 (“*the initial communication path*”) established by proximity setup component 108 “is separate from network 120,” thus “*does not traverse the access point.*” EX1004, [0018], [0029]; EX1003, ¶135.

6. **Rector discloses “receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN” [1.e.3].**

Rector discloses [1.e.3] by disclosing that “[o]nce a connection 202 has been

established, proximity setup component 108 [*‘computing device’*] can provide configuration and setup data to network element 112 [*‘playback device’*]” via connection 202 (*“initial communication path”*). EX1004, [0024], [0030]. The configuration data (*“network configuration parameters”*) includes those required to connect to network 120 (*“the secure WLAN”*), including, e.g., “the service set ID (SSID, also referred to as ‘network name’)” (*“an identifier of the secure WLAN”*), and “the encryption key used to encrypt network data transmitted over the connection” (*“a security key for the secure WLAN”*). EX1004, [0017], [0024], [0030]; EX1003, ¶¶136-38.

7. Rector discloses “using the network configuration parameters to connect to the secure WLAN that is defined by the access point” [1.e.4].

Rector discloses [1.e.4] by disclosing that network device 112 “establish[es] a connection 120.3 with gateway component 106 allowing network device 112 to communicate with any device on network 120,” using the network configuration and setup information, where both 120.2 and 120.3 are part of the network 120 (*“secure WLAN”*) defined by gateway component 106 (*“access point”*). EX1004, [0016]-[0017], [0024]-[0025], [0030]; EX1003, ¶¶139-41.

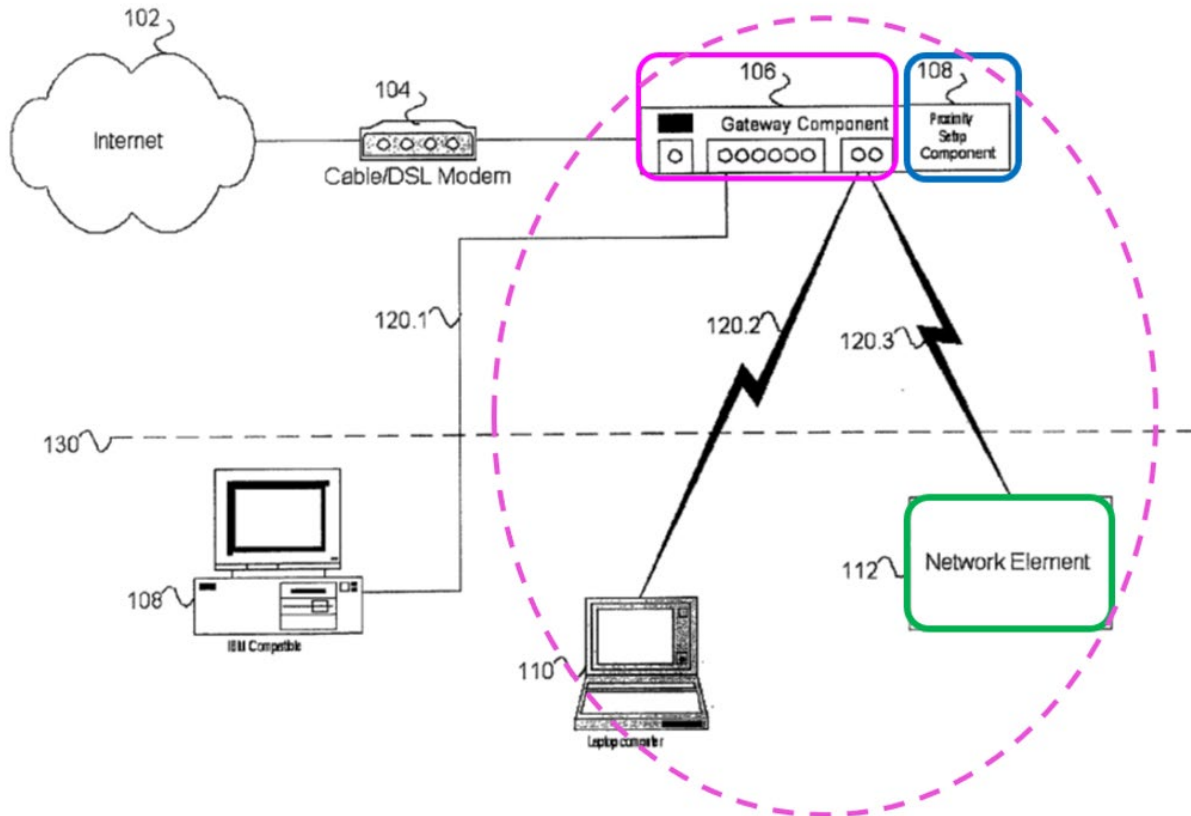


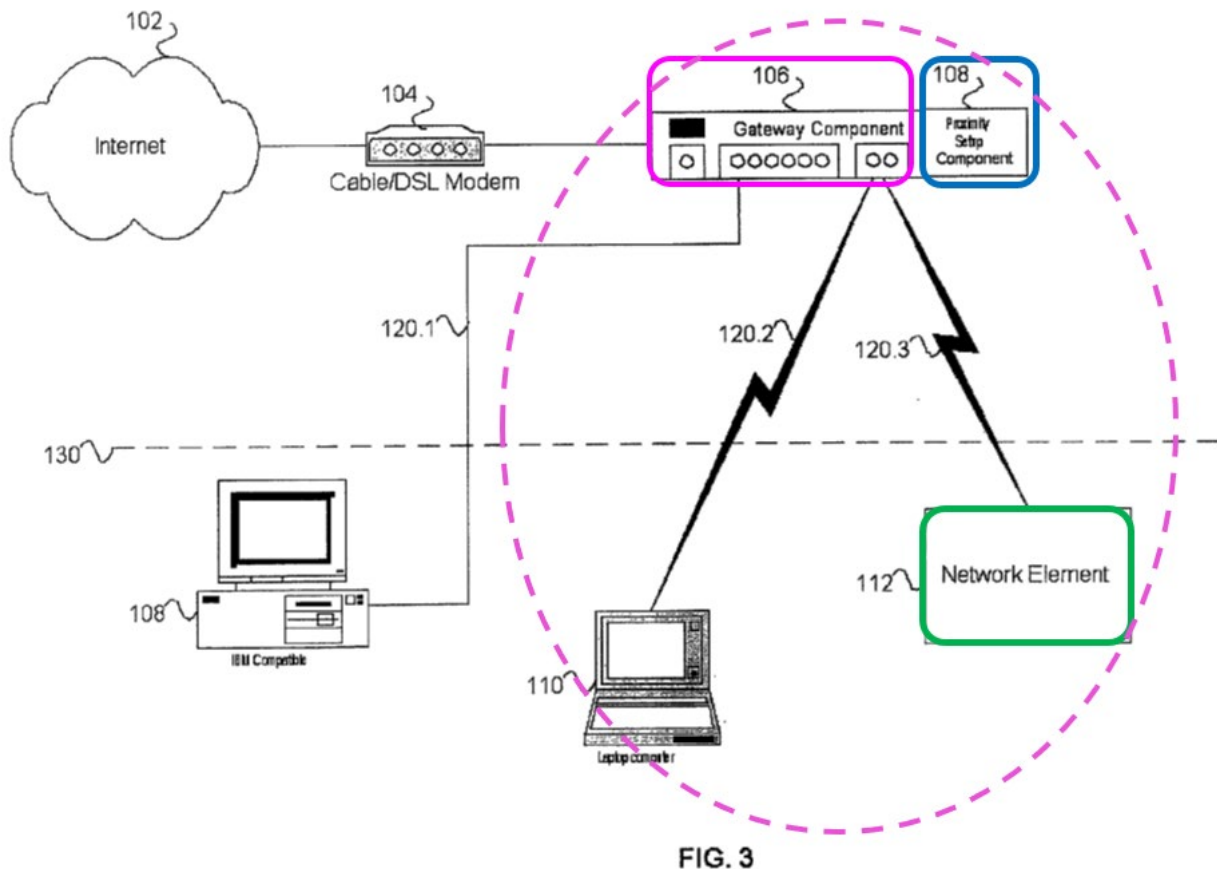
FIG. 3

EX1003, ¶141 — EX1004, FIG. 3 (Annotated)

8. Rector discloses “transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point” [1.e.5].

Rector discloses [1.e.5] by disclosing that network device 112 switches from communicating with proximity setup component 108 via connection 202 (“*initial communication path*”) to network 120 (“*the secure WLAN*”) defined by gateway component 106 (“*access point*”). EX1004, [0016], [0024]-[0025], [0030]; EX1003, ¶¶142-43. In addition to disclosures above for [1.e.4], Rector further discloses that

“after network device 112 has received configuration and setup information,” it may be “moved beyond proximity boundary 130,” to disconnect from connection 202 and “communicate with any device on network 120.” *Supra* Section V.B.7; EX1004, [0025]; EX1003, ¶¶142-43. Rector thus discloses the transition of communication from connection 202 (“*initial communication path*”) to network 120 (“*the secure WLAN*”). EX1003, ¶¶142-43.



EX1003, ¶143 — EX1004, FIG. 3 (Annotated)

Therefore, Rector anticipates or otherwise renders obvious Claim 1.

C. Dependent Claim 2

Rector discloses “*the triggering event comprises one of (a) powering on the playback device or (b) receiving user input via a physical interface of the playback device*” recited by Claim 2.

As discussed for [1.e.1], Rector discloses bringing device 112 into proximity boundary line 130 for setup, which necessarily requires a user to power on the device (“*powering on the playback device*”) and/or physically interface with the device to move it (“*user input via a physical interface of the playback device*”), or at least that is obvious. *Supra* Section V.B.4; EX1004, [0022]-[0023], FIG. 2; EX1003, ¶¶144-47.

D. Dependent Claim 3

Rector discloses or suggests that “*the computing device comprises a controller device of a networked audio system,*” recited by Claim 3.

As discussed for [1.a] and [1.e.2], network device 112 can be “an audio device that receives data over a network and plays the audio data through loudspeakers” and proximity setup component 108 can be a computer functioning as a controller to network device 112. EX1004, [0021], [0026]; EX1003, ¶149. Rector further discloses that device 112 and component 108 are connected through a network and thus they form a “*networked audio system*” with component 108 being a “*controller device.*” EX1004, [0024], [0025]; EX1003, ¶149. Even if the “*networked audio*

system” is interpreted to include more than one audio devices, Rector expressly discloses “audio devices can be connected to the network that receive audio files from a source in the network,” and the disclosed “invention is not limited in any way by . . . number of devices connected to gateway component 106.” EX1004, [0003], [0016], FIGs. 1-3 (all showing multiple networked devices); *see also* EX1003, ¶150. Rector thus discloses or at least suggests that multiple audio devices can be setup and form a “*networked audio system*” controlled by a controller device. EX1003, ¶150; EX1004, [0003].

E. Dependent Claim 4

Rector discloses “*after receiving the second message, providing an indication that the playback device has successfully received the network configuration parameters for the secure WLAN,*” recited by Claim 4.

FIG. 3 of Rector shows “after network device 112 has received configuration and setup information,” it may be “moved to its desired location.” EX1004, [0025]; EX1003, ¶153. A POSITA would have understood that for network device 112 (“*playback device*”) to be moved, it must have provided some type of indication that it “has received configuration and setup information” (“*providing an indication that the playback device has successfully received the network configuration parameters for the secure WLAN*”). EX1004, [0025]; EX1003, ¶¶153-154.

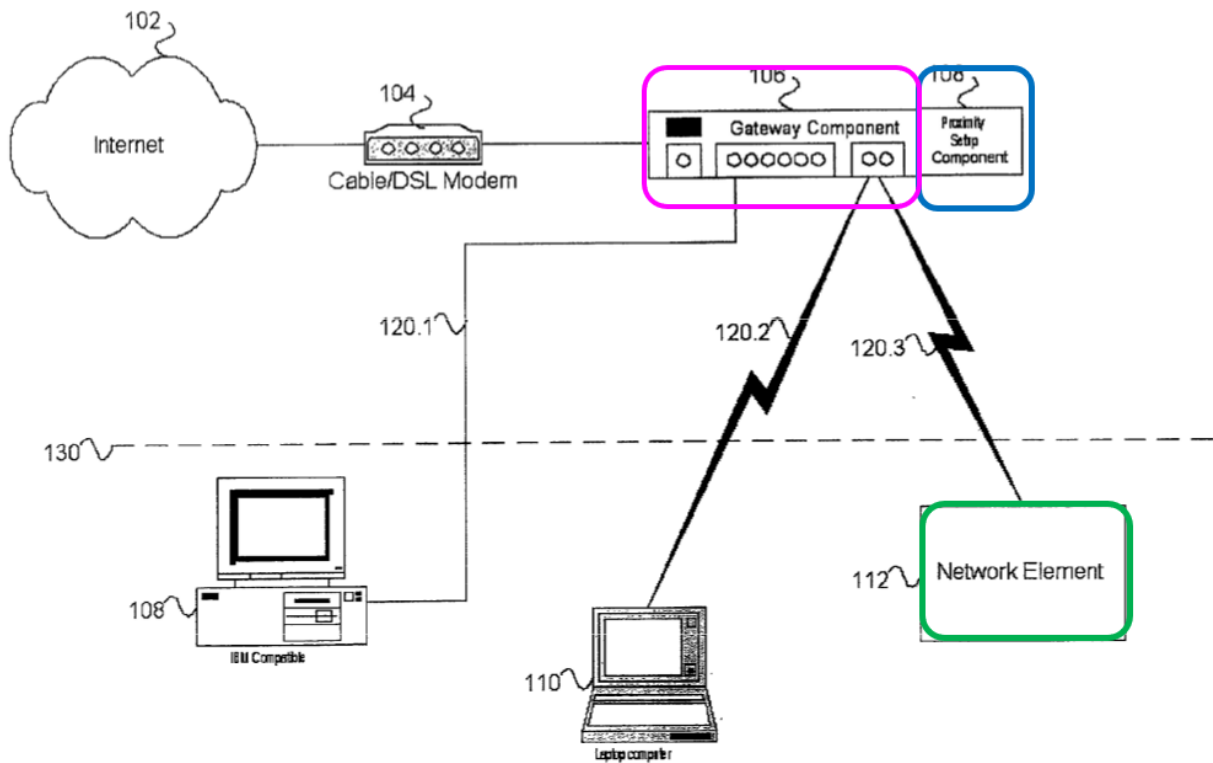


FIG. 3

EX1003, ¶153 — EX1004, FIG. 3 (Annotated)

F. Dependent Claim 5

Rector discloses or suggests “*providing the indication comprises transmitting, to the computing device via the initial communication path, at least a third message indicating that the playback device has successfully received the network configuration parameters,*” recited in Claim 5, which depends from Claim 4.

As discussed for Claim 4, Rector discloses providing an indication that “network device 112 has received configuration and setup information.” *Supra* Section V.E; EX1004, [0025]; EX1003, ¶156. Rector further discloses that, “it is

desirable for network connection 202 to be an infra-red wireless connection,” and the infra-red communication standard inherently requires network device 112 to send an acknowledging message, over connection 202, after receiving the configuration data from component 108. EX1004, [0023]; EX1003, ¶157; EX1010, 11.

Therefore, Rector discloses or at least suggests transmitting an infra-red message (“*third message*”) via connection 202 (“*the initial communication path*”) to acknowledge that the configuration data is successfully received. EX1003, ¶¶155-58. A POSITA would also have found it straightforward, routine, and advantageous to do so for efficiency and security of the system, as explicitly motivated by Rector. EX1003, ¶158; EX1004, [0004].

G. Dependent Claim 6

Rector discloses or suggests that “*providing the indication comprises providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters,*” recited in Claim 6, which depends from Claim 4.

As discussed for Claim 4, Rector discloses providing an indication that “network device 112 has received configuration and setup information.” *Supra* Section V.E; EX1004, [0025]; EX1003, ¶160. Rector further discloses that with the

received configuration data, network device 112 will “establish a connection 120.3 with gateway component 106” to “communicate with any device on network 120,” such as to “receive[] data over [the] network and play[] the audio data.” EX1004, [0021], [0025]. A POSITA would have understood any of these actions by network device 112 to reach out to devices on the network (connecting to gateway component 106, communicating with other networked device, or receiving audio data over the network) is “*an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.*” EX1003, ¶¶160-161.

To the extent the Board requires the “indication” to be explicit, a POSITA would have found it straightforward, routine, and advantageous to provide such an indication explicitly such as a message so that others understand the device is successfully connected and ready for use. EX1003, ¶¶161-162; EX1004, [0002], [0003]. A POSITA would have known including such an indication would predicably work and provide expected results. EX1003, ¶162.

H. Dependent Claims 7 and 8

Rector discloses or suggests “*after connecting to the secure WLAN, establishing a new networked audio system on the secure WLAN,*” recited by Claim 7, and “*after connecting to the secure WLAN, joining an existing networked audio system operating on the secure WLAN,*” recited by Claim 8.

As discussed for Claim 3, Rector discloses that after “establish[ing] a connection 120.3 with gateway component 106,” device 112 “receives data over a network and plays the audio data through loudspeakers,” including, e.g., receiving data from “external network 102.” *Supra* Section V.D; EX1004, [0021], [0016]; EX1003, ¶164. Rector therefore discloses after connecting to network 120, network device 112 and component 106 establish “*a new networked audio system on the secure WLAN*,” recited by Claim 7. EX1003, ¶164.

Rector discloses multiple “audio devices can be connected to the network” using the setup method disclosed by Rector, and a POSITA would have understood that an audio device already connected to network 120 would have formed “*an existing networked audio system operating on the secure WLAN*” with component 106, as explained for Claim 7. EX1004, [0003], [0016]; EX1003, ¶¶164-165. Rector discloses after a new audio device is connected to network 120, it will communicate with other devices, and that includes communicating with component 106 and the existing audio devices over the network 120, thus “*join[ing] the existing networked audio system*,” as in Claim 8. EX1004, [0016]; EX1003, ¶¶166-68.

I. Dependent Claim 10

Rector discloses or suggests obvious that “*communicating with the computing device via the secure WLAN comprises receiving a command related to playback of*

audio content,” recited by Claim 10.

Specifically, Rector discloses network device 112 “receives data over a network and plays the audio data through loudspeakers” and a POSITA would have understood that, for the audio device to properly playback the audio data, such data necessarily include “*a command related to playback of audio content.*” EX1004, [0021], [0016]; EX1003, ¶170.

J. Dependent Claim 11

Rector discloses or suggests “*the command comprises a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN*” and “*in response to receiving the command, retrieving the audio content from the audio source via the communication path that includes the secure WLAN,*” recited by Claim 11. Rector expressly discloses “audio devices can be connected to the network that receive audio files from a source in the network and play them through a loudspeaker.” EX1004, [0003], [0021]; EX1003, ¶171. A POSITA would have understood that for an audio device to receive such audio files, it must receive a command instructing it to retrieve them and then it goes to retrieve in response to that command. EX1003, ¶¶172-73.

K. Dependent Claim 12

Rector discloses “*the second message comprises a command for the playback*

device to adopt the network configuration parameters,” recited by Claim 12.

As discussed for [1.e.3], Rector explicitly discloses that network device 112 receives a “*second message*” that includes the “*network configuration parameters.*” *Supra* Section V.B.6; EX1004, [0017], [0024], [0030]; EX1003, ¶175. Rector further emphasizes that “devices connecting to gateway component 106 **must be configured** with communications parameters to enable the devices communicate over network 120.” EX1004, [0017]. Therefore, the second message necessarily includes a command for network device 112 to adopt those received network configuration parameters, as otherwise it cannot connect to network 120, defeating the purpose of Rector’s invention. EX1003, ¶¶175-176; EX1004, [0003].

L. Independent Claim 14

- 1. Rector discloses a “non-transitory, computer-readable storage medium, wherein the non-transitory computer-readable storage medium is provisioned with program instructions that are executable to cause a playback device to perform functions” [14.p].**

Rector discloses [14.p], which is substantively the same as [1.c] and [1.d]. *Supra* Section V.B.2-V.B.3; *see also* EX1003, ¶178.

- 2. Rector discloses all remaining elements of Claim 14.**

Rector discloses or suggests all remaining elements of Claim 14, which are the same as [1.e.1]-[1.e.5]. Rector anticipates or otherwise renders obvious Claim 14 for similar reasons explained for Claim 1. *Supra* Sections V.B.4-V.B.8; *see also*

EX1003, ¶178.

M. Dependent Claims 15-19

Rector anticipates or otherwise renders obvious Claims 15-18, which are essentially the same as Claims 2, 4-6, respectively, and Claim 19 which is essentially the same as Claims 10 and 11. *Supra* Section V.C, V.E-V.G, V.I-V.J; *see also* EX1003, ¶¶179-183.

N. Independent Claim 20

1. Rector discloses a “method” [14.p].

Rector discloses a method for setting up an audio playback device on a secured WLAN. EX1004, [0021]; *see also* EX1004, [0003], [0005].

2. Rector discloses all remaining elements of Claim 20.

Rector discloses or suggests all remaining elements of Claim 20, which are the same as [1.e.1]-[1.e.5]. Rector anticipates or otherwise renders obvious Claim 20 for similar reasons explained for Claim 1. *Supra* Sections V.B.4-V.B.8; *see also* EX1003, ¶185.

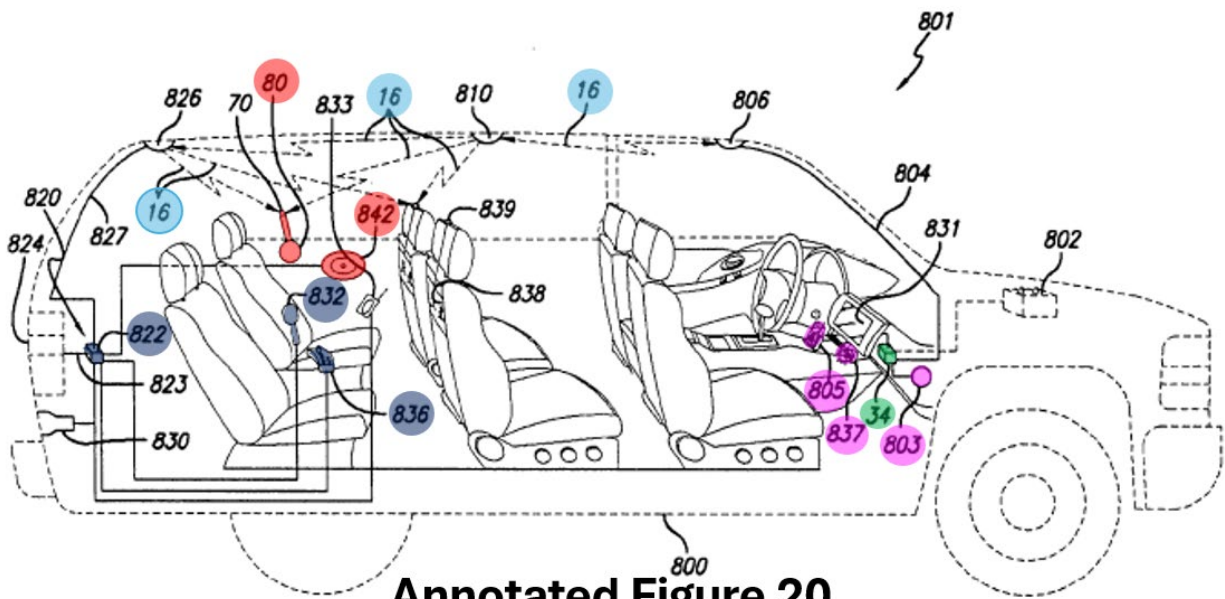
VI. GROUND 3: RECTOR IN VIEW OF RICHENSTEIN RENDERS OBVIOUS CLAIMS 3, 7-11, 13, AND 19

As discussed in Section V, Rector anticipates or otherwise renders obvious claims 3, 7-8, 10-11, and 19 but to the extent further disclosure is required, Rector in view of Richenstein renders these claims obvious. EX1003, ¶¶186-192. Rector in view of Richenstein also renders claims 9 and 13 obvious.

A. Overview of Richenstein

Like the '883 Patent, Richenstein provides devices, methods, and systems for playing synchronized audio on a network of audio devices. EX1005, Abstract, [0002]; EX1003, ¶86.

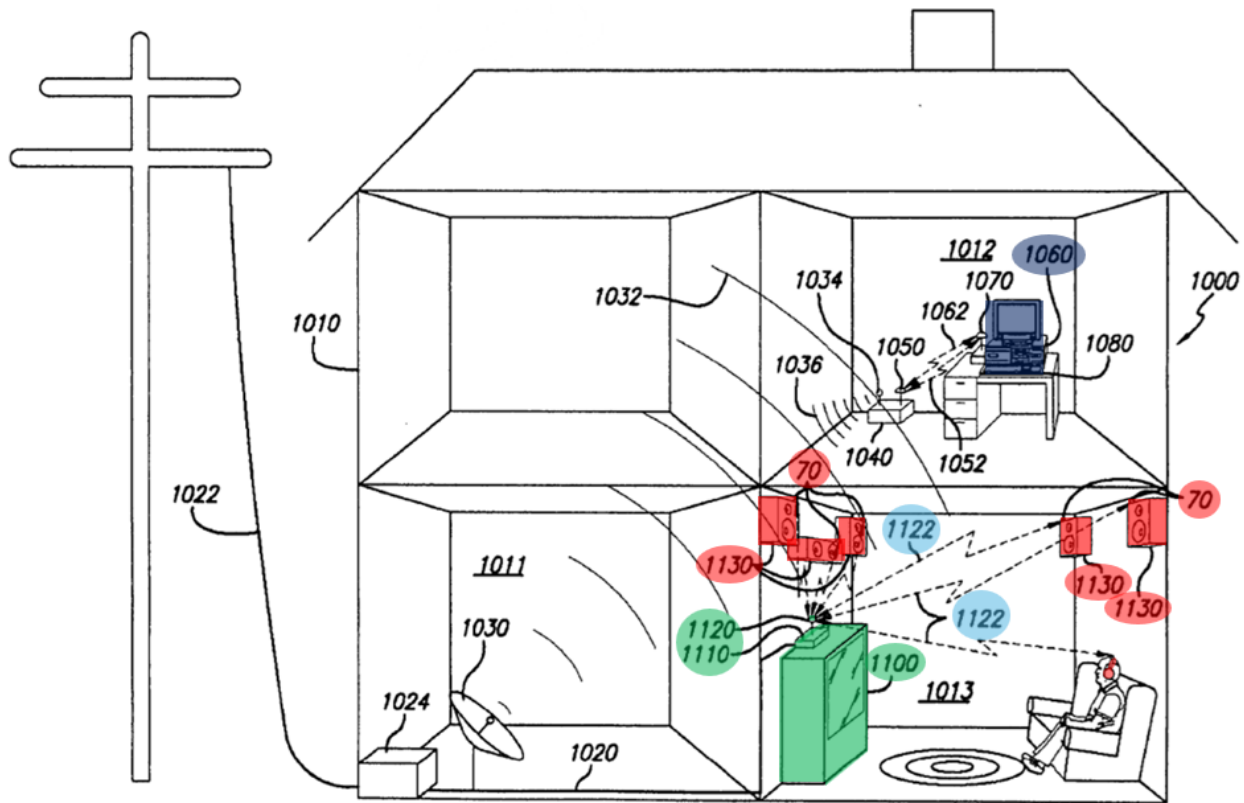
To achieve this, Richenstein discloses various networked audio devices with wireless capabilities, including infrared connections. *See generally*, EX1005, Figs. 1-2, 4-5, 7, 10, 14-23 and related descriptions; EX1003, ¶¶87-88. Richenstein provides various embodiments of a networked audio system, including in-vehicle infotainment systems (Figs. 19-22) and a home entertainment system (Fig. 23). *See* EX1005, Figs. 19-23; *see also* EX1003, ¶¶95-99. In the in-vehicle embodiment (Fig. 20, annotated in EX1003), Richenstein discloses multiple audio devices including audio device 34 (green), headphones 80 and speaker 842 (red) and several controller devices, including headphones 80 (red), microphone 832 and game control devices 836 (dark blue) that control the networked audio system through audio device 34. EX1005, [0146]-[0159]; *see also* EX1003, ¶¶96. For example, the controller devices send control commands to audio device 34 for it to access and retrieve audio data from audio sources. EX1005, [0165]-[0166]; EX1003, ¶¶90-91. Audio device 34 then transmits audio content to speaker 842 for playback in synchrony, using synchronization methods described by Richenstein. EX1005, [0052]-[0053], [0057], [0144], [0164]; EX1003, ¶¶92-93.



Annotated Figure 20

EX1003, ¶96 — EX1005, FIG. 20 (Annotated)

In the home entertainment embodiment on a LAN 1020 (Fig. 23, annotated in EX1003), Richenstein discloses audio devices including home theatre (green) and speakers 1130 (red), and a computer 1060 (dark blue) that controls the networked audio system. EX1005, [0174]-[0176]; EX1003, ¶99. For example, computer 1060 may control home theatre 1100 to access and retrieve audio data from cable network 1022. EX1005, [0174]. Home theatre 1100 then transmits audio content to speaker 1130 for playback in synchrony. EX1005, [0052]-[0053], [0057], [0176]; EX1003, ¶99.



Annotated Figure 23

EX1003, ¶99 — EX1005, FIG. 23 (Annotated)

Richenstein’s systems also allow “custom features” such as an “individual identification” of an audio device to “be entered by a user via the controls provided on the headphones.” EX1005, [0169]; EX1003, ¶101.

B. Reasons to Combine Rector and Richenstein

Each dependent claim challenged under Ground 3 recites only generic operations of the playback device after setup (“post-setup operations”), unrelated to the setup process itself that the ’883 patent purported invented. EX1003, ¶188. Richenstein provides multiple embodiments of these claimed post-setup operations,

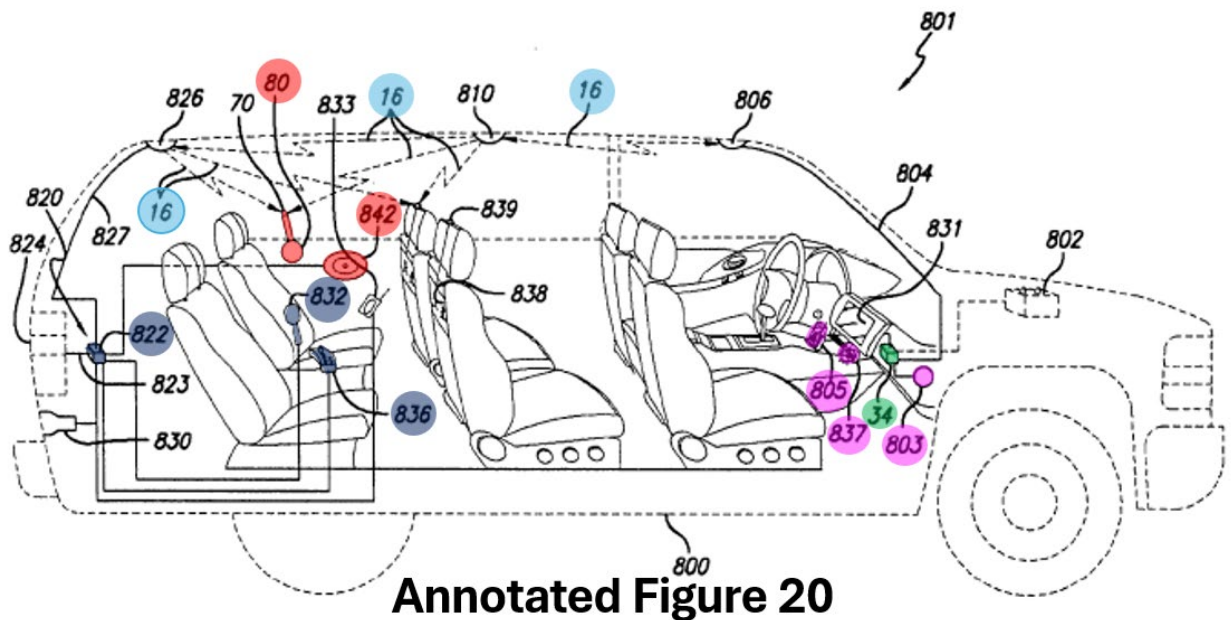
including controlling networked audio devices (Claims 3, 9), forming/joining playback groups (Claims 7-8), controlling audio content retrieval from sources (Claims 10-11), and coordinating synchronized playbacks (Claim 13). *See generally*, EX1005; EX1003, ¶188. A POSITA would have found it obvious to implement any of these post-setup operations disclosed by Richenstein on Rector's audio device after connecting to the network. EX1003, ¶188.

Rector and Richenstein are analogous art, both relating to audio playback devices on a wireless network. EX1001, 6:36-52, 9:1-20; EX1004, [0002]; EX1005, [0003], [0024]; EX1003, ¶189. Similar to Rector, Richenstein specifically designs its network to be “easily expandable . . . to connect additional devices to the network” through wireless interfaces. EX1005, [0173]. Thus, the post-setup operations disclosed by Richenstein are designed to accommodate and thus compatible with devices newly connected to its network and a POSITA would have found it routine, straightforward, and advantageous to implement the post-setup operations on Rector-disclosed audio device after it joins the network. EX1003, ¶¶190-191. A POSITA would have known such a combination (yielding the claimed limitations) would provide expected results with a reasonable expectation of success, particularly as the post-setup operations do not modify the setup process. EX1003, ¶¶190-191.

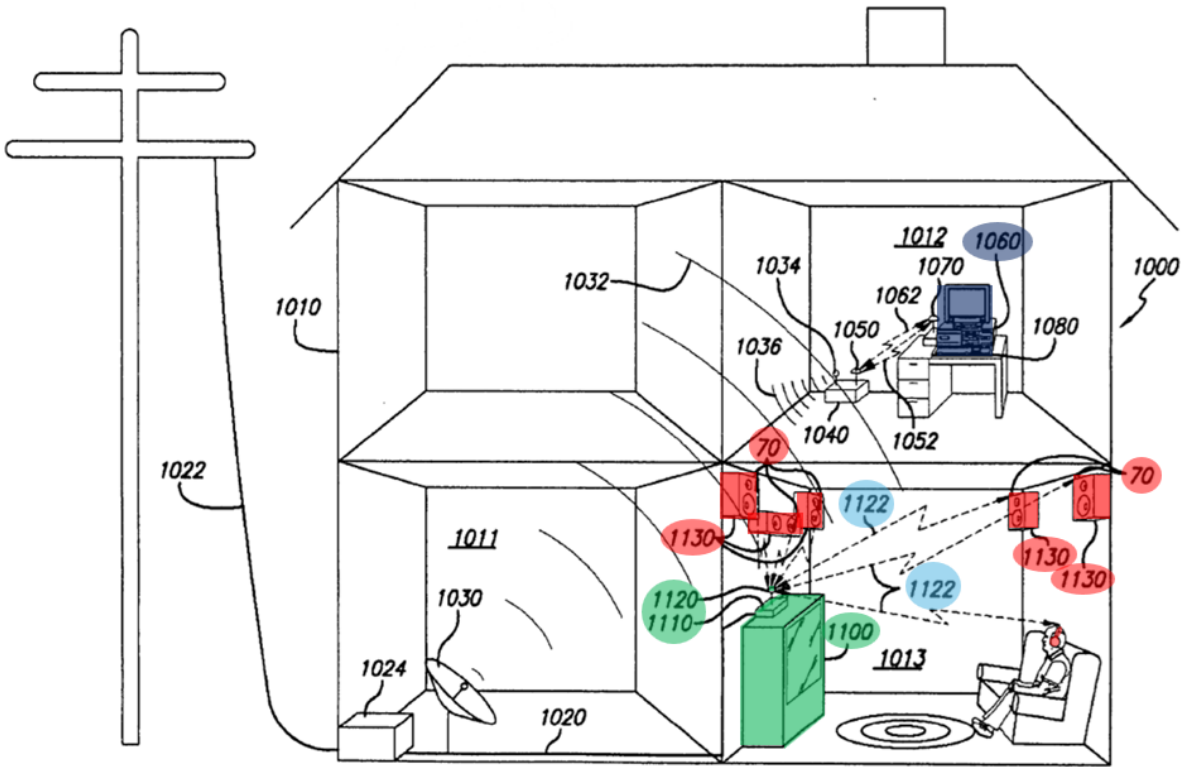
C. Dependent Claim 3

Rector in view of Richenstein renders obvious Claim 3.

In addition to Rector's disclosure discussed in Sections V.D, Richenstein specifically discloses a game controller 836, e.g., "a joystick, touch pad, mouse, etc." or computer 1060 ("*controller device*") that controls media playback, e.g., to select channel or cable network content to be played by audio devices on a wireless network ("*networked audio system*"). EX1005, [0152], [0174], annotated Figs. 20 and 23; EX1003, ¶¶193-95.



EX1003, ¶194 — EX1005, FIG. 20 (Annotated)



Annotated Figure 23

EX1003, ¶195 — EX1005, FIG. 23 (Annotated)

Rector further discloses that proximity setting component 108 can be a computer and it is connected to audio devices over wireless network 120. EX1004, [0021]. A POSITA would have found it obvious to have Rector's computer to implement audio system control functions performed by controller devices in Richenstein to control the networked audio devices in Rector, for reasons explained above. *Supra* Section VI.B; EX1003, ¶¶186-92, 196.

D. Dependent Claims 7 and 8

Rector in view of Richenstein renders obvious Claims 7-8.

In addition to Rector’s disclosure discussed in Section V.H, Richenstein explicitly discloses that after connecting to the network, audio devices, such as headphones 80 in the in-vehicle audio system of Fig. 20 or headsets 14 in the home entertainment audio system of Fig. 23, can establish a “synchronization” group with other devices on the network (“*establish a new networked audio system*”). EX1005, [0066], EX1003, ¶¶198-99. Richenstein further discloses that headsets 14 might be “replaced or moved between” different synchronization groups (“*join an existing networked audio system*”). *Id.* A POSITA would have found it obvious to apply Richenstein’s teachings to the Rector-disclosed audio device after it joins the network, for reasons explained in Section VI.B. EX1003, ¶¶186-92, 199. In addition, a POSITA would have been motivated by Richenstein to have Rector’s newly connected audio device to either establish or join a networked audio system, to achieve a stated goal of Richenstein—maintain synchronization operations between multiple playback devices. EX1005, [0066] (“one important task . . . is to maintain synchronization between the operations”); EX1003, ¶199.

E. Dependent Claim 9

Rector in view of Richenstein renders obvious “*receiving, from the computing device, a command to assign a name to the playback device,*” recited by Claim 9.

As discussed in Section V.B, Rector discloses network device 112 configured to join network 120 and such device 112 inherently has its identification. EX1003,

¶201. Richenstein explicitly discloses that each audio device “may be provided with a means of individual identification, which may be entered by the user via the controls.” EX1005, [0169]. Richenstein uses such identification for individual configurations and settings according to the user’s preferences. *Id.* A POSITA would have found it routine, straightforward, and advantageous to assign a name, as taught by Richenstein, to the Rector-disclosed audio device for individual configurations and settings, and for reasons explained in Section VI.B. EX1003, ¶¶186-92, 201-04.

F. Dependent Claims 10-11, 19

Rector in view of Richenstein renders obvious Claims 10-11 and 19.

In addition to Rector’s disclosures in Sections V.I-J, Richenstein specifically discloses the controller devices may send commands to audio device 34 or home theatre 1100 for playback (“*command related to playback of audio content*”), which includes commands for the device to access and retrieve audio content from audio sources like cellular device 805 or cable network 1022/Internet (“*command to retrieve audio content for playback from an audio source*”). EX1005, [0165]-[0166], [0174]; EX1003, ¶¶207, 211, 220. Given the explicitly disclosed common goal of both Rector and Richenstein to enable audio playback devices to receive and play content from sources accessible over a network, and for reasons explained in Section VI.B, a POSITA would have found sufficient teaching, suggestion, and motivation to apply Richenstein’s specific teaching of the commands in controlling Rector’s

audio device to “receive audio files from a source in the network.” EX1004, [0002]; EX1005, [0003]; EX1003, ¶¶186-92, 205-12, 220.

G. Dependent Claim 13

Rector in view of Recheinstein renders obvious “*after transitioning to communicating with computing device via the secure WLAN, receiving, from the computing device, a command to form a group with at least a first playback device of a networked audio system such that the playback device is configured to play back audio content in synchrony with at least the first playback device,*” recited by Claim 13.

As discussed in Sections V.H-J, Rector discloses after network device 112 transitions to communication over network 120, it receives a command to retrieve audio content from other networked devices on network 120 for playback. EX1004, [0003], [0021], [0016]; EX1003, ¶214. Richenstein further discloses how important it is to form a synchronization group of playback devices and maintain synchronization playback operations between them and discloses detailed synchronization methods to achieve that goal. EX1005, [0066] (“one important task . . . is to maintain synchronization between the operations”), [0053]-[0061]; EX1003, ¶215. Synchronous playback between devices is crucial for user experience in both the in-vehicle and home entertainment systems described by Richenstein. EX1005, Figs. 20 and 23; EX1003, ¶215. Under the explicit teaching, suggestion,

and motivation by Richenstein to maintain synchronization between playback devices in a group, and for reasons explained in Section VI.B, a POSITA would be motivated and find it advantageous to have Rector's audio device play in synchrony with another playback device. EX1003, ¶¶186-92, 216-18.

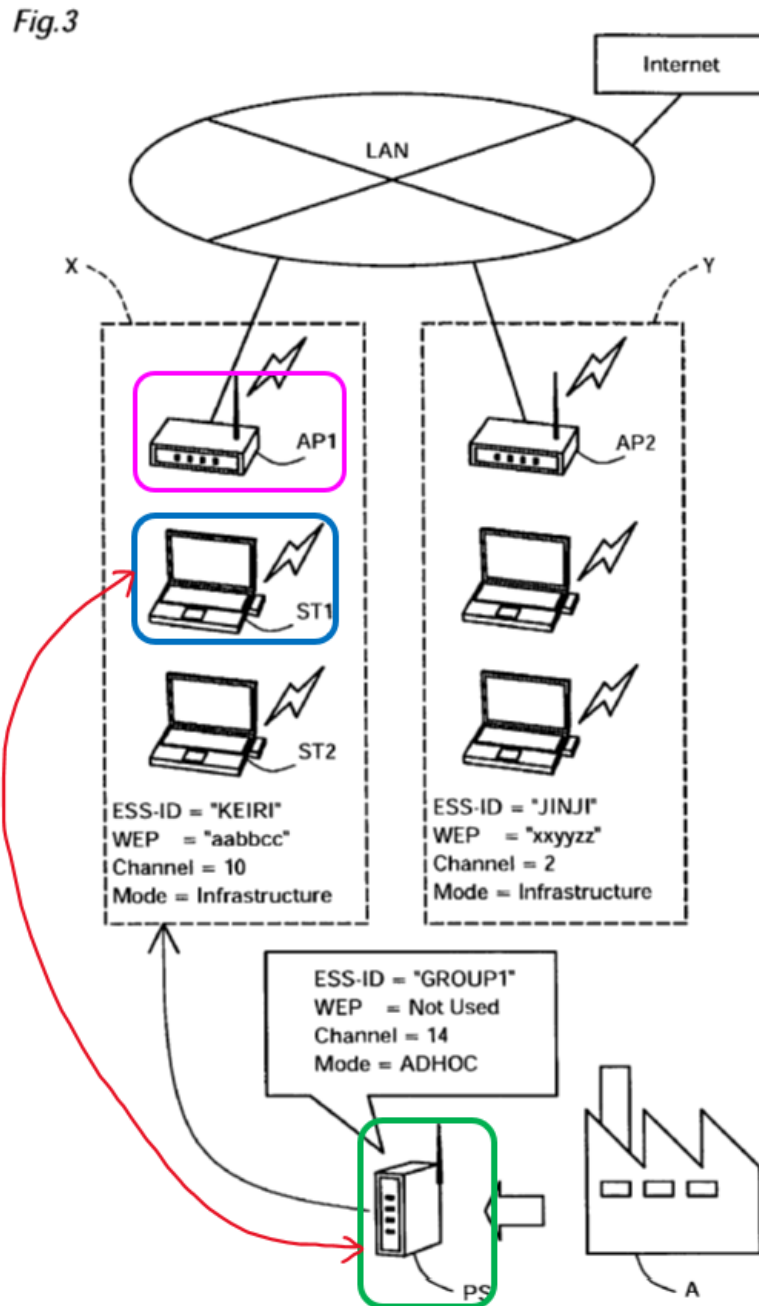
VII. GROUNDS 4-5: GASSHO ANTICIPATES OR OTHERWISE RENDERS OBVIOUS CLAIMS 1-8, 12, AND 14-20

A. Overview of Gassho

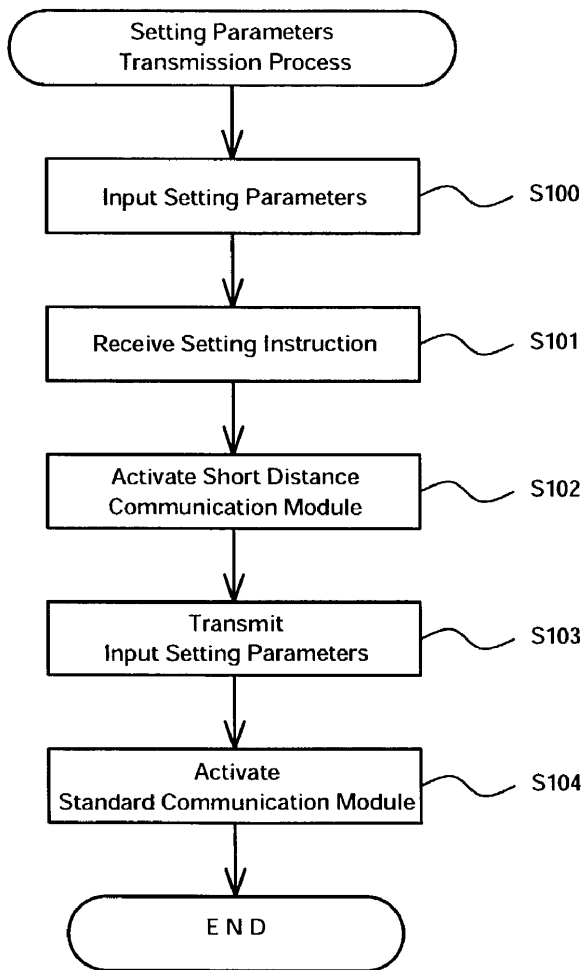
Gassho describes using a wireless communication device on a wireless network to securely set up another wireless communication device to connect to that wireless network. EX1006, Abstract, [0002]. Similar to the '883 patent and Rector, Gassho also recognizes that “[i]n the wireless LAN, setting information in each wireless communication device is required for establishment of communication,” such as ESS-ID, channel, and WEP key, and this setup process may be difficult for the user, especially for devices that has no “interface to implement the settings.” EX1006, [0004]. [0005]; EX1003, ¶102. Like Rector, Gassho also provides a nearly identical solution as claimed in the '883 patent—establishing a short distance connection between a device already on the WLAN and the new wireless network device for the networked device to transmit the network setting parameters of the WLAN to the new device. EX1006, Abstract, [0008]-[0011]; EX1003, ¶102.

Gassho provides two embodiments: a first embodiment utilizing a station ST to carry out the settings in another wireless communication device, and a second embodiment utilizing an access point to carry out the same settings. EX1006, [0061]. For example, FIG. 3 of Gassho (annotated in EX1003) shows the first embodiment, where a wireless communication device (in green box), such as a print server (PS), is to be added to an infrastructure WLAN network group X defined by an access point AP1 (in pink box). EX1006, [0045], [0054], FIGs. 3-4; EX1003, ¶103. A station ST1 connected to AP1 is used as a wireless equipment setting device to transmit the network setting parameters of network group X to PS. EX1006, [0048]-[0052], [0055]; EX1003, ¶103. To do that, ST1 and PS are first set to the same channel to enable “a direct communication” (redline) between them and then ST1 activates a short distance communication to securely transmit the setting parameters, including ESS-ID and WEP, to radio print server PS over the direct connection. EX1006, [0054]-[0055], FIG. 3, FIG. 4 (S100-S103); EX1003, ¶103. In the second embodiment, Gassho discloses the short distance communication can also be established in response to a signal from the other device requesting the setting parameters. EX1006, [0065], FIG. 6 (steps S200-S201); EX1003, ¶103. After PS confirms that the setting parameters are received, ST1 stops the short distance communication with PS and activates a “standard communication” to transmit other

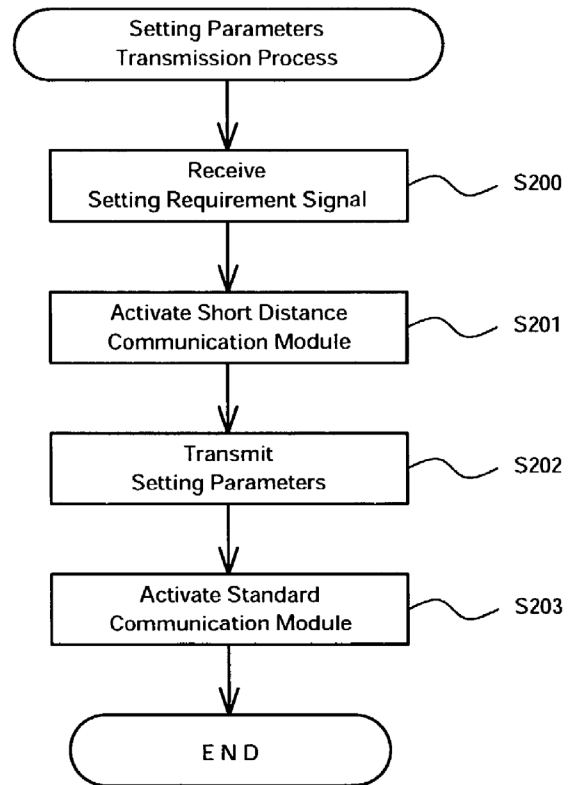
data such as print data. EX1006, [0009], [0017], [0042], [0054], [0056]; EX1003, ¶
103.



EX1003, ¶103 — EX1006, FIG. 3 (Annotated)



EX1006, FIG. 4



EX1006, FIG. 6

While Gassho describes its invention mainly in the context of a networked printer system (a printer server being the “wireless communication device”), Gassho discloses that the same techniques can readily apply to “various wireless communication devices including cordless phones, cell phones, and walkie-talkies.” EX1006, [0075]; EX1003, ¶104.

B. Independent Claim 1

1. Gassho discloses [1.p].

Gassho discloses [1.p] by disclosing a “wireless communication device” that can be, among other, a “cell phone,” which is an audio “*playback device*.” EX1006, [0073]. A POSITA would have known that cell phones at the time had audio playback functions, such as basic MP3 music playing functions and certainly voice message playbacks. EX1003, ¶222.

Even if the Board finds Gassho’s disclosure inexplicit, a POSITA would have found it obvious to implement Gassho’s techniques on an audio playback device, because Gassho’s invention was made specifically to set up “wireless communication devices” that “may not have an interface to implement the settings,” and audio devices were known at the time of the invention to lack a usable UI, as expressly recognized by Rector. EX1004, [0005] (“For many of the low-cost, special purpose devices such as the network audio device described above, the user interface is non-existent or difficult to use”); EX1006, [0003]; EX1003, ¶¶223-25. A POSITA would also have found it routine, straightforward, and advantageous to do so, as Gassho itself expressly acknowledges its setup process does not differ for different types of “wireless communication device” that needs set up. EX1006, [0075] (“The technique of the present invention . . . is applicable to settings between various wireless communication devices including cordless phones, cell phones, and walkie-

talkies.’’). Therefore, implementing Gassho’s invention for an audio playback device is nothing but the use of known technique to improve similar devices in the same way, which requires little variation, if any, and yields predictable results. EX1003, ¶¶226-27; *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-421 (2007).

The arguments regarding “playback device” apply to analysis below of each claim element that recites this term.

2. Gassho discloses [1.a].

Gassho discloses [1.a] by disclosing that the wireless communication device includes a “wireless communication card MC” (“*network interface*”) to provide connection with wireless networks such as those under IEEE 802.11b standards (“*data network*”). EX1004, [0021]; EX1003, ¶229.

3. Gassho discloses [1.b]-[1.d].

Gassho discloses [1.b]-[1.d] by disclosing that the wireless communication device includes a CPU (“*processor*”), “a diversity of recording media, such as a flexible disk, a CD-ROM, a DVD, an MO, an IC card, a ROM cartridge, or a hard disk” (“*a non-transitory computer readable medium*”) and programs recorded on the recording medium “that causes the computer to attain the functions” (“*program instructions*”). EX1006, [0020], [0040]; EX1003, ¶230. Gassho discloses various embodiments for the wireless communication device, including ST, PS, cell phone,

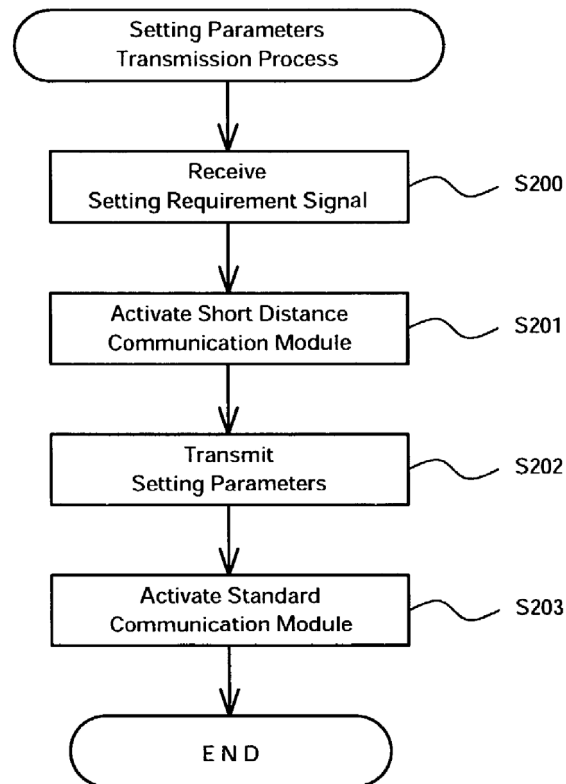
etc., all of which a POSITA would have understood to have all these features recited in [1.b]-[1.d]. EX1003, ¶230.

4. Gassho discloses [1.e.1].

Gassho discloses [1.e.1] by disclosing that the wireless communication device is triggered by an event (“*triggering event*”) to enter a setup mode in which the device transmits a “setting requirement signal” (“*first message*”) to request setting parameters (“*available for setup*”). EX1006, [0054]-[0055], [0065]; EX1003, ¶231.

Gassho discloses that a radio print server (PS) for setup is “in an initial factory state,” and ST1 needs to be set to the initial settings of the PS to “enable direct communication between the station ST1 and the radio print server PS.” EX1006, [0054]-[0055]; EX1003, ¶232. As to how these initial settings are received by ST1, Gassho discloses that the user can obtain them from an instruction manual (in the first embodiment), or the wireless communication device sends a “setting requirement signal” that includes the device’s own factory setting parameters (in the second embodiment). EX1006, [0065], FIG. 6 (step S200). This setting requirement signal is a “request signal that requires the setting parameters,” thus indicating that the wireless communication device is available for setup and thus constitutes the “*first message*.” EX1003, ¶ 232. Gassho suggests the features of the two embodiments are compatible and a POSITA would understand that Gassho discloses

or at least suggests that the first embodiment can have PS send the “setting requirement signal.” EX1006, [0061], [0066], [0068], [0074]-[0075]; EX1003, ¶232.



EX1006, FIG. 6

Gassho’s use of “setting requirement signal” is a standard way for IP broadcasting, same as the applicant admitted prior art (AAPA) in the ’883 patent. EX1001, 2:30-33 (acknowledging its probing messaging in compliance with this “standard IP broadcast”); EX1003, ¶¶232-233. A POSITA would have understood that a triggering event is inherent to Gassho because the device must be triggered by a certain event to be in a setup mode, from its factory state, to send the “setting

requirement signal.” EX1003, ¶ 233. Indeed, consistent with the IP broadcast standard, the disclosed “beacon” must be sent after the device is power-on or reset (“*triggering event*”). EX1001, 2:30-33; EX1003, ¶ 233. This is in fact how the wireless print server EpsonNet 802.11b offered by Gassho’s assignee, Seiko Epson Corp., actually triggers the device to be in setup mode in a setup process as disclosed by Gassho. EX1039 (EpsonNet user guide), 8, 10, 16. Furthermore, a POSITA would have found using a triggering event to cause PS to send the “setting requirement signal” straightforward, routine, and advantageous because doing so provides more certainty on when a device can be set up to connect to the network. EX1003, ¶ 233.

5. Gassho discloses [1.e.2].

Gassho discloses [1.e.2] by disclosing that the wireless communication device receives a response to the “setting requirement signal” (“*first message*”), which facilitates establishing a direct connection using short distance communication (“*initial communication path*”) with wireless equipment setting device (“*computing device*”) that has programs running thereon to control the wireless communication device (“*application for controlling the playback device*”). EX1006, [0054]-[0055], [0065], [0070]; EX1003, ¶ 234.

Gassho discloses that the “setting requirement signal” may be “a beacon or

any other signal that . . . includes setting parameters” of the device ready for setup. EX1006, [0065]. For example, these initial setting parameters include the factory setting ESS-ID and communication channel of the PS, which ST1 adopts to “enable direct communication between the station ST1 and the radio print server PS” (*“response to first message”*). EX1006, [0054], [0055]; EX1003, ¶235. The initial exchange facilitates wireless equipment setting device to activate short distance communication over the direct connection (*“establishing the initial communication path”*) to transmit setting parameters. EX1006, [0055], [0065], [0070]. It is commonly known in the art that an IP broadcast message, such as a beacon, requires the recipient to respond before a connection is made between the sender and the recipient. EX1003, ¶235; EX1006, [0055], [0065], [0070]; EX1011, 36, 75. Indeed, Gassho’s use of its setting requirement signal and response would have been well-known to a POSITA at the time of the invention and is consistent with the same “standard IP broadcast” acknowledged by the ’883 patent (AAPA) and also implemented by Spurgat. EX1001, 2:30-35, 16:31-51; EX1007, [0093], [0107]; EX1003, ¶236. Therefore, a POSITA would have understood that a response to the broadcast beacon is required for the disclosed “direct connection” to establish, and therefore inherent to Gassho. EX1003, ¶236. Alternatively, Gassho’s ST1 also sends a *response* when “the user clicks the ‘Set’ button to give the setting instruction,”

facilitating “station ST1 activates the short distance communication.” Gassho, [0055]; EX1003, ¶236.

A POSITA would also have found it obvious to transmit a response to the “setting requirement signal” before establishing the direct connection, because doing so would provide the receiving device with information of the device that detects it and will establish a direct connection with it, to further improve security in transmitting the setting parameters. EX1003, ¶237; EX1006, [0006] (describing the importance to “keep the setting information in secrecy” while transmitting over the direct connection), [0057]. A POSITA would also have found it routine and straightforward to implement such a response, which yields a predictable result. EX1003, ¶237.

Gassho further discloses [1.e.2] by disclosing that the wireless equipment setting device, e.g., ST1 (“*computing device*”) is operating on a wireless network group X (“*a secure wireless local area network (WLAN)*”) that is defined by AP1 (“*an access point*”), and that direct connection using short distance communication (“*the initial communication path*”) with ST1 (“*computing device*”) does not traverse AP1 (“*the access point*”). EX1006, [0040], [0044], [0054]-[0055]; EX1003, ¶¶238-39.

For example, Gassho discloses station ST includes a personal computer PC

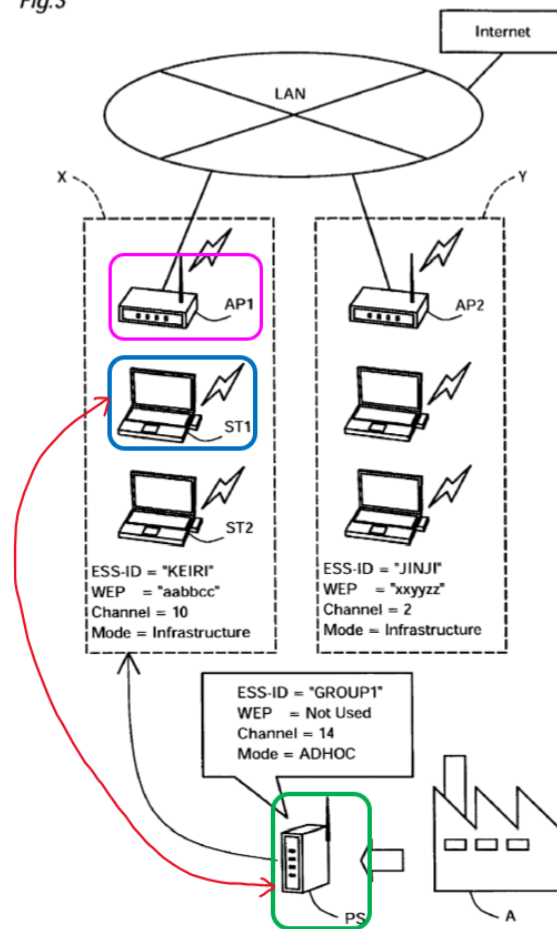
(“*computing device*”), which has “several functions for settings in a wireless communication device,” and “[t]hese functions are actualized by installation of a utility software program” (“*application for controlling the playback device*”). EX1006, [0040], [0044]. ST also sends print data to PS and controls PS to print. EX1006, [0054]. Gassho further discloses that the “wireless network group X is constructed by an access point AP1 and stations ST1 and ST2” and works under a specific setting. EX1006, [0054]. Gassho therefore discloses ST1 is operating on the wireless network group X (“*WLAN*”). *Id.*; EX1003, ¶239. Gassho also discloses that the short distance communication path (“*the initial communication path*”) is a “direct communication” between ST1 and PS, and thus “*does not traverse the access point*” AP1. EX1006, [0055]; EX1003, ¶239.

6. Gassho discloses [1.e.3].

Gassho discloses [1.e.3] by disclosing that the wireless communication device, e.g., PS (“*playback device*”) receives from the wireless equipment setting device, e.g., ST1 (“*computing device*”) via the direction connection using short distance communication (“*initial communication path*”) the setting parameters of network group X (“*at least a second message containing network configuration parameters for the secure WLAN*”), including ESS-ID (“*an identifier of the secure WLAN*”) and the WEP key (“*a security key for the secure WLAN*”). EX1006, [0045], [0054]-[0055]; EX1003, ¶¶241-42.

Gassho explicitly discloses that “station ST1 activates the short distance communication module 11 . . . and transmits the input setting parameters to the radio print server PS (step S103).” EX1006, [0055], FIGs. 3-4. The “setting parameters” include those required to connect to wireless network group X (“*the secure WLAN*”), including, e.g., ESS-ID “for identifying a wireless network group” and WEP representing “key information used for encoding and decoding data transmitted and received.” EX1006, [0045], [0054].

Fig.3



EX1003, ¶242 — EX1006, FIG. 3 (Annotated)

7. Gassho discloses [1.e.4].

Gassho discloses [1.e.4] by disclosing that the wireless communication device, e.g., PS uses the setting parameters it received from ST1 to connect to wireless network X (“*the secure WLAN*”) that is defined by AP1 (“*access point*”). EX1006, [0056]; EX1003, ¶243. Gassho expressly discloses that “the radio print server PS receives the setting parameters by radio and carries out setting required for communication” on wireless network X. EX1006, [0057].

8. Gassho discloses [1.e.5].

Gassho discloses [1.e.5] by disclosing that the wireless communication device, e.g., PS, switches from communicating with ST1 via short distance communication (“*initial communication path*”) to standard communication over wireless network group X (“*the secure WLAN*”) that is defined by AP1 (“*access point*”). EX1006, [0056]; EX1003, ¶244. Gassho discloses that during the course of direct communication with PS, ST1 temporarily keeps its original setting for wireless network group X aside. EX1006, [0058]. Gassho discloses that after sending the setting parameters, ST1 “inactivates the [short] distance communication module 11 and activates the standard communication module 10 (step 104)” to communicate with PS, such that “[t]he radio print server PS receives print data from stations ST via wireless communication and causes a printer connected via a cable to print the input print data.” EX1006, [0054], [0056]. That indicates ST1 stops

communication with PS via the direct connection after setup, and returns to communicate with PS over wireless network group X using the original settings, which is a transition of communication as recited in element [1.e.5]. EX1006, [0056], [0058]; EX1003, ¶¶243-244.

Therefore, Gassho anticipates or otherwise renders obvious claim 1.

C. Dependent Claim 2

Gassho further discloses or suggests the elements of Claim 2.

As discussed for [1.e.1], Gassho discloses, or at least suggests, that powering on (“*powering on the playback device*”) and/or resetting the wireless communication device (“*user input via a physical interface of the playback device*”) constitute the “*triggering event.*” EX1003, ¶245; EX1039, 8, 10, 16.

D. Dependent Claim 3

Gassho further discloses or suggests the elements of Claim 3. Gassho discloses that “station ST used for settings in an external wireless communication device” includes “a personal computer PC,” and “[t]he radio print server PS receives print data from stations ST via wireless communication and causes a printer connected via a cable to print the input print data.” EX1006, [0040], [0054]. As discussed for [1.p], Gassho discloses an audio device—a cell phone—as another embodiment of its “wireless communication device,” which ST can similarly set up and control for audio playback. EX1006, [0075]; EX1003, ¶¶246. Therefore, a

POSITA would have understood that Gassho discloses ST as a controller device of an audio device, and the two devices are connected over a network to form a “*networked audio system*.” EX1003, ¶¶246-47.

E. Dependent Claim 4

Gassho further discloses the elements of Claim 4. Gassho expressly discloses that “[t]he station ST1 stops the transmission of the setting parameters, in response to input of a response message that is sent from the radio print server PS and represents that the setting parameters have been received,” which is precisely “*providing an indication that the playback device has successfully received the network configuration parameters*” in Claim 4. EX1006, [0056]; EX1003, ¶248.

F. Dependent Claim 5

Gassho further discloses the elements recited in Claim 5. Gassho expressly discloses that the indication that “the setting parameters have been received” is in the form of “a response message” and it is “sent from the radio print server PS” to ST1. EX1006, [0056]; EX1003, ¶249. At the time, ST1 and PS are directly connected using short distance communication only (“*initial communication path*”), and thus the response message disclosed by Gassho is necessarily sent through that connection. EX1003, ¶249.

G. Dependent Claim 6

Gassho further discloses or suggests the elements of Claim 6.

Gassho expressly discloses that after “the radio print server PS carries out setting required for communication,” it “receives print data from stations ST via wireless communication.” EX1004, [0021], [0025], [0054], [0056]. A POSITA would have understood any of these actions by PS (connecting to the network, or receiving data over the network) is “*an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.*” EX1003, ¶251. Such an indication would also have been obvious to a POSITA because doing so would allow other devices or the user to understand the connection is successful and therefore ready for use on the network, a stated goal by Gassho. EX1003, ¶252; EX1006, [0002].

H. Dependent Claims 7 and 8

Gassho further discloses or suggests the elements of Claims 7 and 8.

As discussed for Claim 3, Gassho discloses that after connecting to wireless network group X, ST1 and PS form a new networked printing system to carry out printing tasks. EX1006, [0040], [0054]. And because Gassho discloses the same technique is applicable to an audio device—a cell phone—as another embodiment of its “wireless communication device,” a POSITA would therefore understand that Gassho discloses ST and the audio device can similarly form “*a new networked audio system on the secure WLAN,*” recited by Claim 7. EX1003, ¶254.

A POSITA would have further understood that Gassho discloses, to the extent an audio device is already connected to a network group, it would have formed “*an existing networked audio system operating on the secure WLAN*” as in Claim 7. EX1003, ¶255. A POSITA would have found it obvious to repeat the setting process disclosed by Gassho to set up another new audio device, which will communicate with other devices, including the existing audio device on the network group, thus “*join[ing] the existing networked audio system,*” as in Claim 8. EX1003, ¶255.

I. Dependent Claim 12

Gassho further discloses the elements of Claim 12.

As discussed for [1.e.3], Gassho explicitly discloses that PS receives a “*second message*” that includes the “*network configuration parameters.*” EX1006, [0045], [0054]-[0055]; EX1003, ¶257. Gassho emphasizes that “[i]n the wireless LAN, setting information in each wireless communication device is **required** for establishment of communication.” EX1006, [0004]. Gassho further discloses that “the required parameters may be input as commands.” EX1006, [0046]. Therefore, a POSITA would understand that the second message includes a “*command*” for network device 112 to adopt those received network configuration parameters, as otherwise it cannot connect to network 120, defeating the purpose of Gassho’s invention. EX1003, ¶257.

J. Independent Claim 14

1. Gassho discloses [14.p].

Gassho discloses [14.p], which is substantively the same as [1.c] and [1.d]. *Supra* Section VII.B.3, EX1003, ¶258.

2. Gassho discloses remaining elements.

Gassho discloses or suggests all remaining elements of Claim 14, which are the same as [1.e.1]-[1.e.5]. Gassho anticipates or otherwise renders obvious Claim 14 for similar reasons explained for Claim 1. *Supra* Sections VII.B.4-8, EX1003, ¶258.

K. Dependent Claims 15-18

Gassho anticipates or otherwise renders obvious Claims 15-18, which are substantively the same as Claims 2 and 4-6, respectively. *Supra* Section VII.C, E-G, EX1003, ¶258.

L. Independent Claim 20

1. Gassho discloses [20.p].

Gassho discloses a method for setting up a playback device on a secured WLAN. EX1006, [0073], EX1003, ¶258.

2. Gassho discloses remaining elements.

Gassho discloses or suggests all remaining elements of Claim 20, which are the same as [1.e.1]-[1.e.5]. Rector anticipates or otherwise renders obvious Claim 20 for similar reasons explained for Claim 1. *Supra* Sections VII.B.4-8, EX1003,

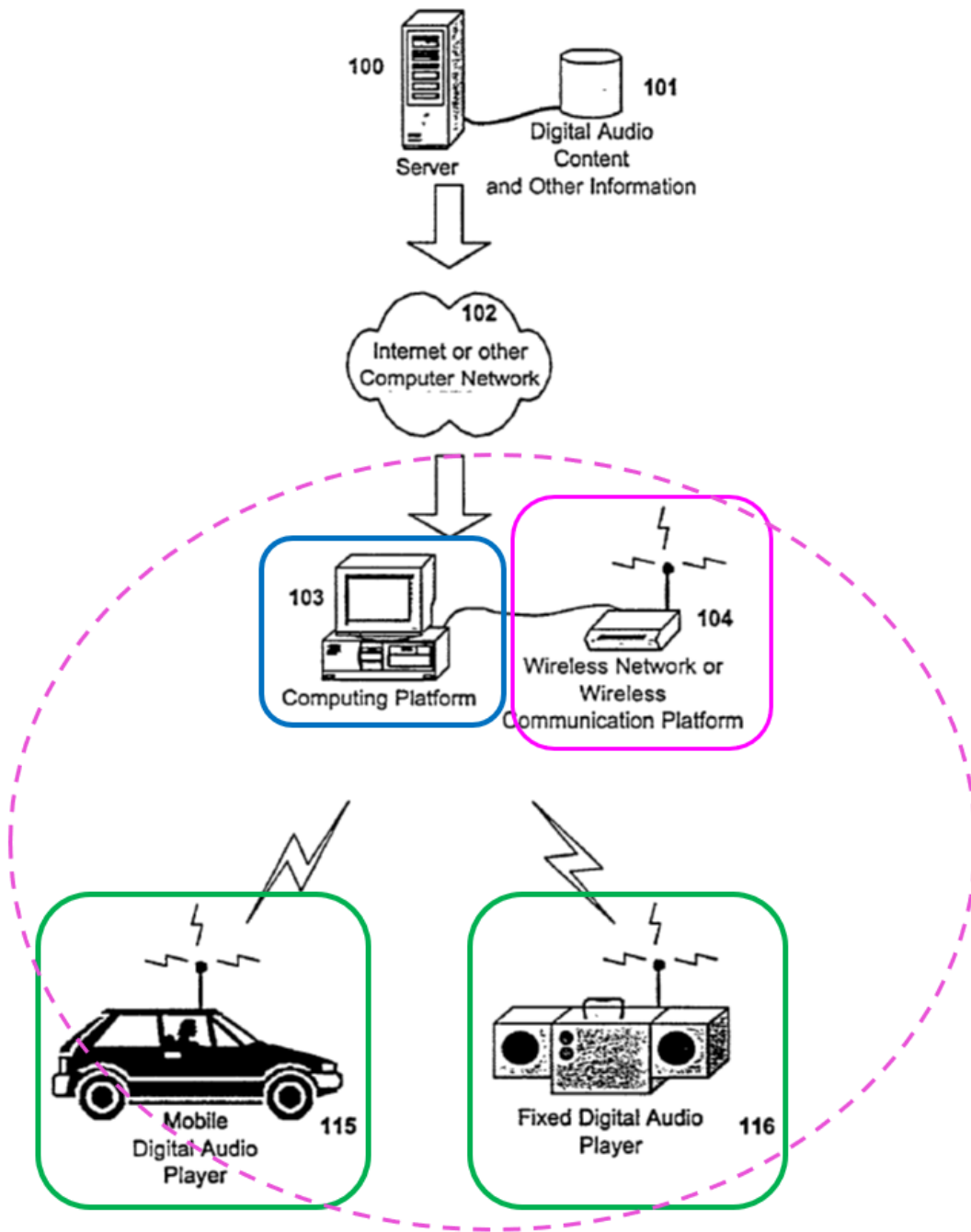
¶258.

VIII. GROUND 6: SPURGAT IN VIEW OF GASSHO RENDERS OBVIOUS CLAIMS 1-20

A. Overview of Spurgat

Spurgat is directed to a digital playback device that “is configured to enable wireless communication among other digital playback devices and/or a computing platform to allow synchronization and control.” EX1007, Abstract, EX1003, ¶105.

Just like the HOUSEHOLD audio system in the '883 patent, Spurgat discloses various embodiments of a digital audio communication system that includes multiple digital audio players, a controller to control the digital audio players, and a gateway to the Internet to enable the digital audio players to access additional digital audio content. *See* EX1007, [0034]-[0057], FIGs. 1-7; EX1001, 9:1-20; EX1003, ¶106. For example, FIG. 1 of Spurgat (annotated in EX1003) specifically shows a digital audio communication system (pink-dashed oval) including computing platform 103 (blue), e.g., a computer, configured to communicate with “various digital audio players 115 and 116” (green) via a wireless local area network formed by communication platform 104 (pink), e.g., an access point. EX1007, [0034]-[0036], FIG. 1; EX1003, ¶106.



EX1003, ¶106 — EX1007, FIG. 1 (Annotated)

Like the playback device in the '883 patent, Spurgat discloses that the digital audio player synchronizes digital audio content, such as playlists, with other digital audio players, which allows a user to move from one player to another while

listening to “the same music and playlist in a seamless manner.” EX1007, [0036], [0043], [0099]; EX1001, 7:53-65; EX1003, ¶107. Spurgat also discloses discovery of digital audio players to form or be added to “a list of players in proximity” for content synchronization. EX1007, [0092]-[0097]; EX1003, ¶107.

B. Independent Claim 1

1. Spurgat discloses [1.p].

Spurgat discloses various digital audio players 115, 116, 111, 110, 113, and 112 (“*playback device*”) connected via a wireless network 102. EX1007, [0034], FIGs. 1, 3, 4; EX1003, ¶269.

2. Spurgat discloses [1.a].

Spurgat discloses each digital audio player (e.g., 115, 116, 111, 110, 113, and 112) includes a “Wireless Network Interface or Wireless Communication Interface” 141 (“*network interface*”) to connect to a wireless network for audio data sharing (“*data network*”). EX1007, [0057], [0069]-[0085], FIGs. 10-13; EX1003, ¶270.

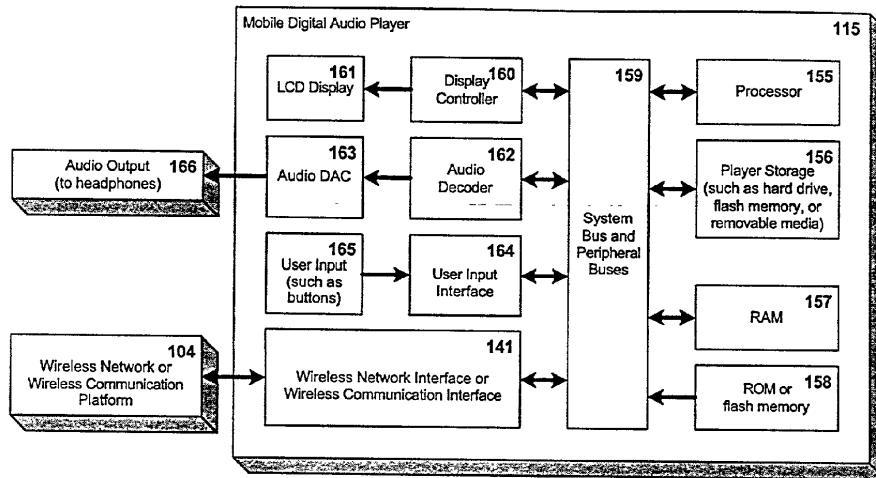


Figure 10

EX1007, FIG. 10.

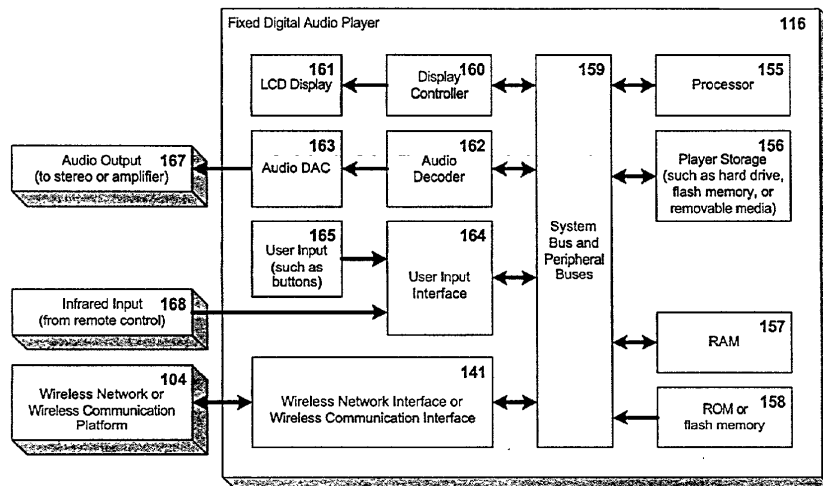


Figure 11

EX1007, FIG. 11.

3. Spurgat discloses [1.b]-[1.d].

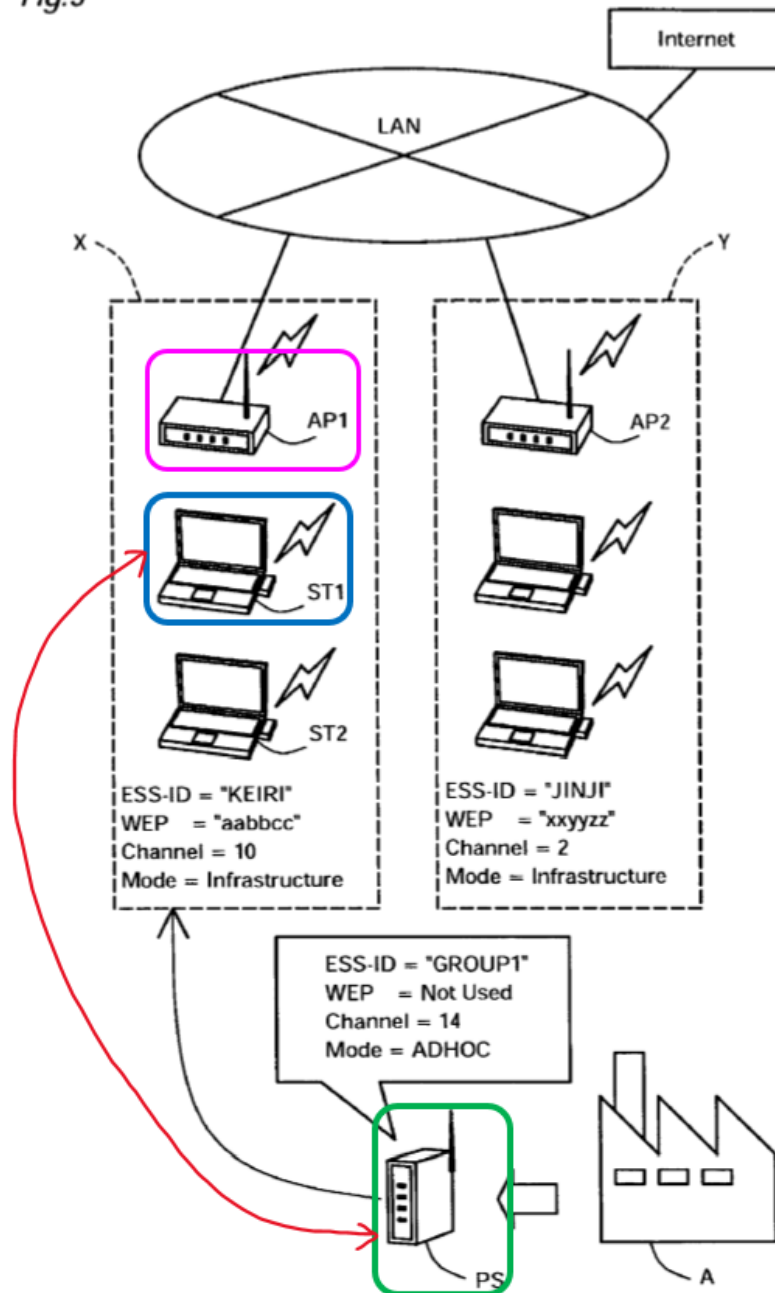
Spurgat discloses that each audio player includes a “processor” 155 ([1.b] “at least one processor”), and player storage 156 and ROM or flash memory 158 ([1.c] “a non-transitory computer-readable medium”) that store “various software and firmware components” ([1.d] “program instructions”). EX1007, [0069]-[0085], FIGs.. 10-13; EX1003, ¶¶271-272.

4. Spurgat in view of Gassho discloses [1.e.1]-[1.e.5].

Spurgat in view of Gassho discloses or suggests [1.e.1]-[1.e.5], which collectively recite a setup process to connect a playback device to a WLAN. *See* EX1003, ¶¶273-294.

Gassho discloses or suggests all the recited features for reasons explained in Grounds 4-5. *Supra* Section VII.B.4-8. As explained, Gassho discloses a “station ST” (“*computing device*”), which is “a personal computer PC,” “used for settings in an external wireless communication device” (“*playback device*”). EX1006, [0040], [0054]; EX1003, ¶¶231-244, 260, 274. Gassho discloses that ST1 is operating on a wireless network group X (“*WLAN*”) that is defined by AP1 (“*an access point*”). EX1006, [0040], [0044], [0054]-[0055], FIG. 3 (annotated); EX1003, ¶¶231-244, 260, 274.

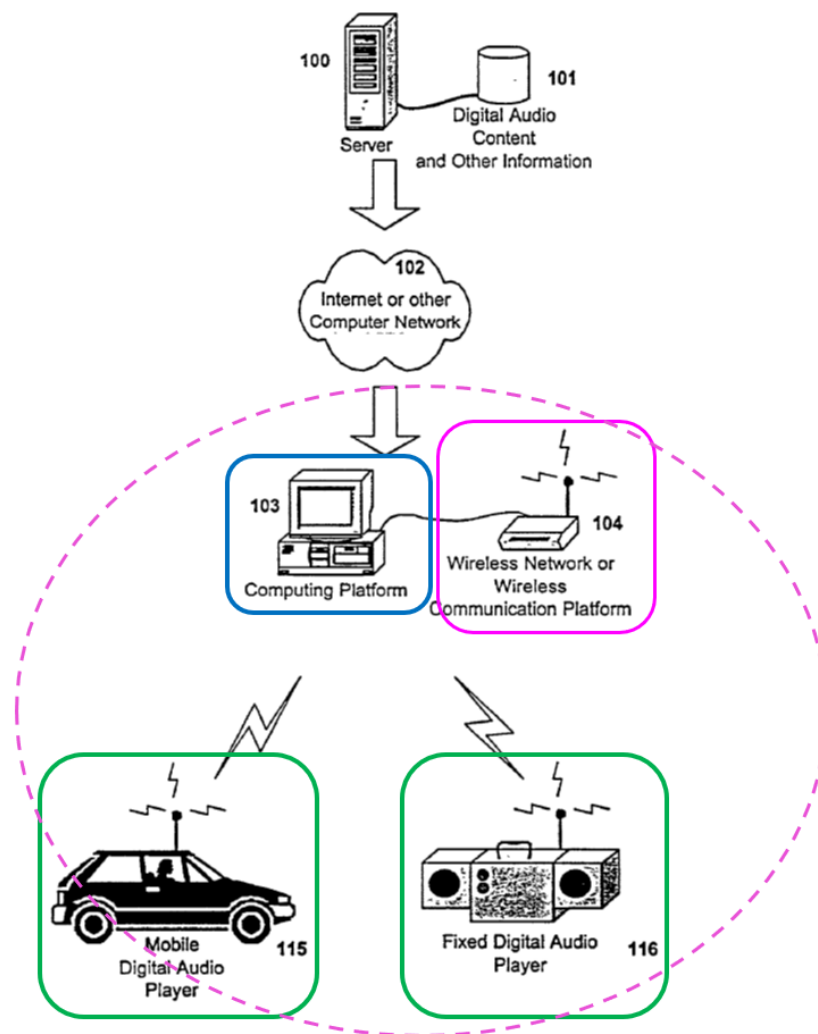
Fig.3



EX1003, ¶274 — EX1006, FIG. 3 (Annotated)

Spurgat discloses communications among various digital audio players (e.g., 115, 116, 111, 110, 113, and 112) ("*playback device*") and computing platform 103

(“*network device*”) on a “local wireless network” (*WLAN*), using device 104 or 106 as an *access point*, for audio data sharing. EX1007, [0053]-[0057], FIGs. 1, 3-4; EX1003, ¶¶261, 273-77. For example, Spurgat discloses computing platform 103, also a computer, is “used to control mobile digital audio players 115 and fixed digital audio players 116.” EX1005, [0036].



EX1003, ¶106 — EX1007, FIG. 1 (Annotated)

Spurgat also discloses an audio player discovery process where Spurgat’s

“discovery handler sends a broadcast for players message” and then receives “a message response from the mobile digital audio players,” (similar to the “*first message*” and “*response*” exchange using IP broadcast disclosed by Gassho), and finally adds the new device on a list of players among which playlist and content synchronization are performed. EX1007, [0093], [0107]-[0108], FIGs. 17, 22-23; EX1006, [0054]-[0055], [0065]; EX1003, ¶¶262, 275.

To the extent Spurgat does not specifically disclose the device setup process specified in [1.e.1]-[1.e.5], a POSITA would have found it obvious to use Spurgat’s computing platform (a computer), to perform the setup functions performed by Gassho’s ST station (also a computer), described for any “wireless communication device,” to setup Spurgat’s audio players to connect to Spurgat’s “local wireless network.” EX1003, ¶¶263, 276.

Spurgat and Gassho are analogous art, in the same field of endeavor as the ’883 patent, which relates to connecting and controlling wireless communication devices on a local wireless network. EX1001, 6:36-52; EX1006, Abstract, [0008]-[0011]; EX1007, [0003]; EX1003, ¶¶259, 280. Both Spurgat and Gassho are pertinent to the purported problem addressed by the ’883 patent: securely discovering and configuring devices for communications on a wireless network. EX1001, 9:1-20; EX1006, Abstract, [0008]-[0011]; EX1007, [0007], [0093]; EX1003, ¶¶259, 264, 281-82.

A POSITA would have found explicit teaching, suggestion, and motivation from Spurgat as it discloses the importance of device discovery and setup. EX1007, [0093] (“Discovery of mobile digital audio players 115 and fixed digital audio players 116 within range of the audio gateway, on the wireless network or wireless communication platform 104, is an important capability with respect to this invention.”), [0107]-[0108], FIGs. 17, 22-23; EX1003, ¶264. Spurgat’s device discovery ends with the handler “adds the player to the list of players in proximity” for playlist continuation and content synchronization. *Id.* A POSITA would have been motivated by Spurgat itself to make the combination. EX1003, ¶¶264-265. A POSITA would also have found the combination routine, straightforward, and advantageous as a proper device discovery and setup is desired before Spurgat’s digital audio players can perform other audio data sharing functions on the network. *Id.*; EX1003, ¶¶266-267, 281.

A POSITA would have had a reasonable expectation that the combination will succeed and yield predictable results, as Gassho itself expressly acknowledges its setup process does not differ for different types of “wireless communication device” that needs set up. EX1006, [0075] (“The technique of the present invention . . . is applicable to settings between various wireless communication devices including cordless phones, cell phones, and walkie-talkies.”); EX1003, ¶266. Indeed, implementing Gassho’s setup process for Spurgat’s audio players is nothing but

using known techniques to improve similar devices in the same way, which requires little variation, if any, and yields predictable results. EX1003, ¶266; *Intel Corp.*, 61 F.4th at 1380-81; *KSR Int'l Co.*, 550 U.S. at 415-421.

Thus, Spurgat in view of Gassho renders obvious Claim 1.

C. Dependent Claims 2, 4-6, and 12

Spurgat in view of Gassho discloses or renders obvious Claims 2, 4-6 and 12, each reciting additional features further specifying the device setup process of Claim 1.

As discussed, Gassho discloses or suggests all these setup features in Claims 2, 4-6 and 12 for reasons explained in Grounds 4-5. *Supra* Section VII.C, E-G. A POSITA would have found it obvious to implement these Gassho-disclosed features during the device discovery and setup process disclosed in Spurgat, for all the reasons explained in Section VII.B.4. EX1003, ¶¶259-267, 273-293, 296-298, 305-318, 337-340.

Furthermore, with respect to Claim 2, Spurgat discloses each digital audio player has “buttons” for user inputs and detection of the player being “turned on” (“*powering on*” and “*user input via a physical interface*”). EX1007, [0042], [0070]. A POSITA would have found it obvious to trigger the digital audio players disclosed in Spurgat by turning it on or having the user press one or more of its buttons, as taught in Gassho. EX1003, ¶¶297-98.

With respect to Claims 4-5, Spurgat discloses the player sends a “content acknowledge message” (“indication,” and “third message”) after receiving the audio content. EX1007, [0091]. A POSITA would have found it obvious for the digital audio players disclosed in Spurgat to send a similar acknowledge message after receiving the content of network configuration parameters, as taught in Gassho. EX1003, ¶¶305-14, 316-318.

D. Dependent Claim 3

Spurgat in view of Gassho discloses or renders obvious Claim 3.

As explained, Gassho discloses a “station ST,” which is “a personal computer PC,” used to control the radio print server PS. *Supra* Section VII.D.

Spurgat discloses a computing platform 103 (“*controller device*”) connected to various digital audio players, such as digital audio players 115 and 116 via a local wireless network (“*networked audio system*”). EX1007, [0034], FIGs. 1, 3, 4; EX1003, ¶302. Spurgat specifically discloses computing platform 103 can be a computer “used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content.” EX1007, [0036]; EX1003, ¶302.

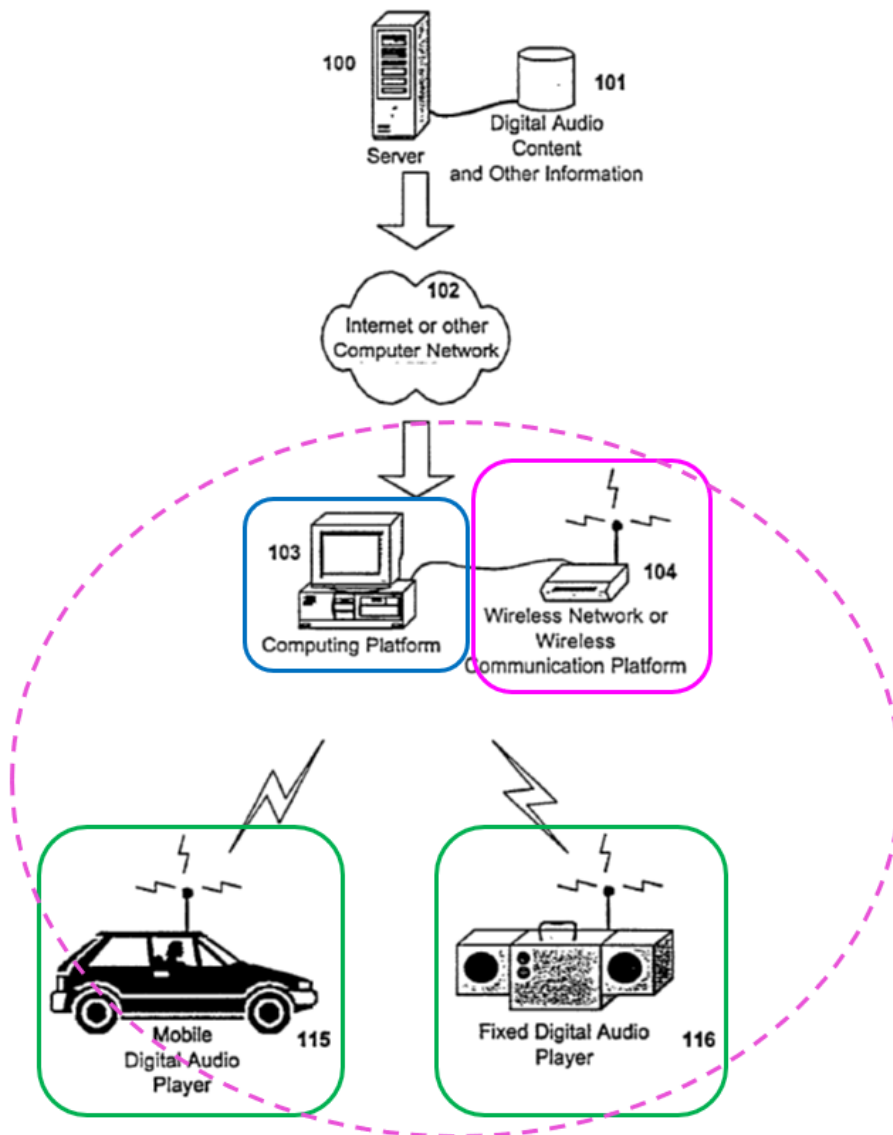
A POSITA would have found it obvious to use Spurgat’s computing platform 103 to perform the setup functions performed by ST station to set up Spurgat’s audio players according to Gassho, and then control them as a networked audio system.

Supra Section VII.B.4-8; EX1003, ¶¶303-304.

E. Dependent Claims 7 and 8

Spurgat in view of Gassho discloses or renders obvious Claims 7 and 8.

Spurgat explicitly discloses that digital audio players and the controller, such as the “various digital audio players 115 and 116” and computing platform 103 (itself can be a player) are grouped to establish “*a new networked audio system*” to synchronize audio content among them. EX1007, [0034]-[0036], FIG. 1 (annotated). Spurgat further discloses that a digital audio player newly discovered device is added to “a list of players in proximity,” thus joining “*an existing networked audio system.*” EX1007, [0092]-[0097]; EX1003, ¶¶319-325. A POSITA would have found it obvious to set up Spurgat’s players on WLAN, according to Gassho, and then form a new group or join an existing one as disclosed by Spurgat. EX1003, ¶¶323-35.



EX1003, ¶322 — EX1007, FIG. 1 (Annotated)

F. Dependent Claim 9

Spurgat in view of Gassho discloses or renders obvious Claim 9. Spurgat further discloses various operations the gateway does to flag, unflag, or otherwise select specific players on the list. EX1007, [0095]; EX1003, ¶327. A POSITA reading Spurgat would have understood that each play on the “list” must be assigned

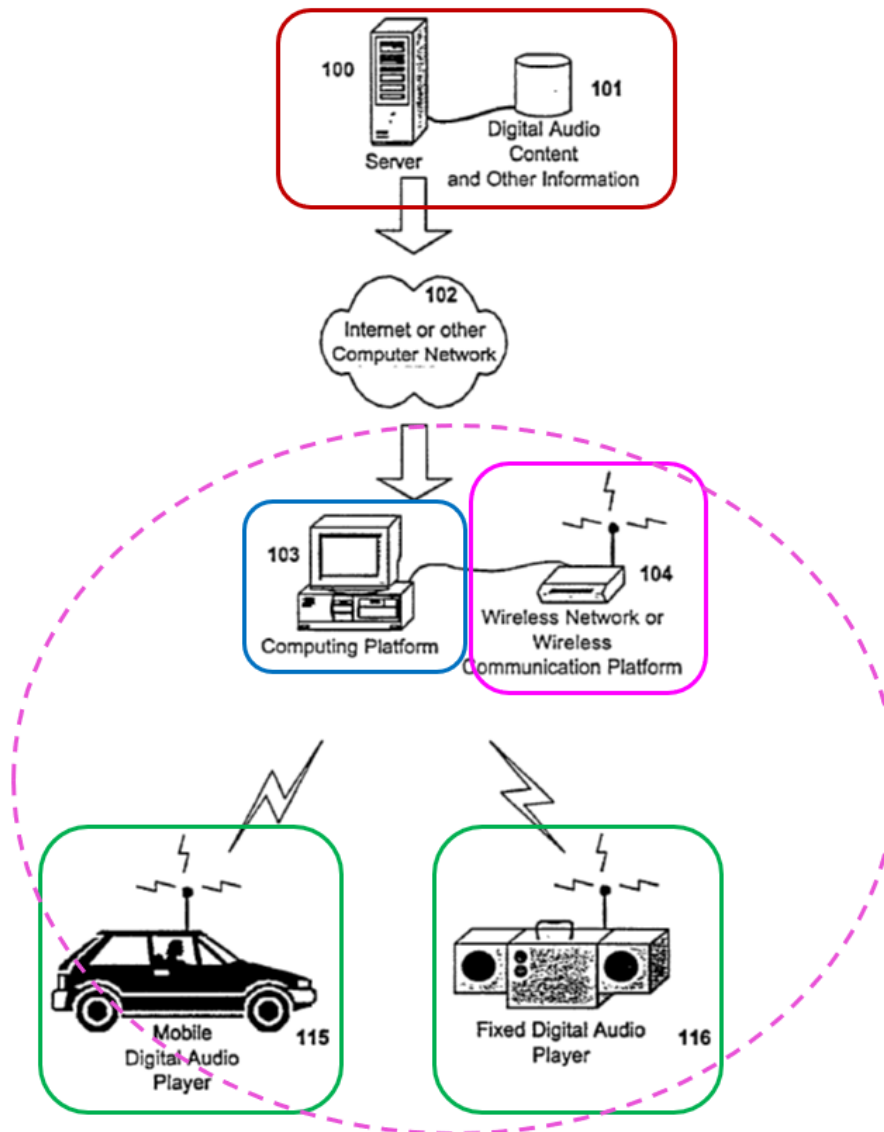
a name by the gateway for identification purpose so that the gateway can tell one player from another on the list. EX1003, ¶327. A POSITA would have found it obvious to name Spurgat players, disclosed by Spurgat, after connected to the WLAN, according to Gassho. EX1003, ¶328.

G. Dependent Claims 10 and 11

Spurgat in view of Gassho discloses or renders obvious Claims 10 and 11.

Spurgat further discloses computing platform 103 (*“computing device”*) may send commands to audio players 115 and 116 for digital audio playback (*“command related to playback of audio content”*), which includes commands for the player to access and retrieve audio content from audio sources like servers 100, in red box (*“command to retrieve audio content for playback from an audio source”*), and the players retrieve the audio content accordingly via a communication path that includes local wireless network 104 (*“the secure WLAN”*). EX1007, [0034]-[0036], FIG. 1 (annotated); EX1003, ¶330. Specifically, Spurgat discloses “a computing platform 103, for example, a personal computer, is used as a gateway to enable various digital audio players 115 and 116” to access digital audio content “from the servers 100 that are connected to the computing platform 103 through the Internet or other computer network 102,” and “computing platform 103 may also be used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content.” *Id.* A

POSITA would have found it obvious to send these commands to the Spurgat's players, as disclosed by Spurgat, after connected to the WLAN, according to Gassho. EX1003, ¶¶330-35.

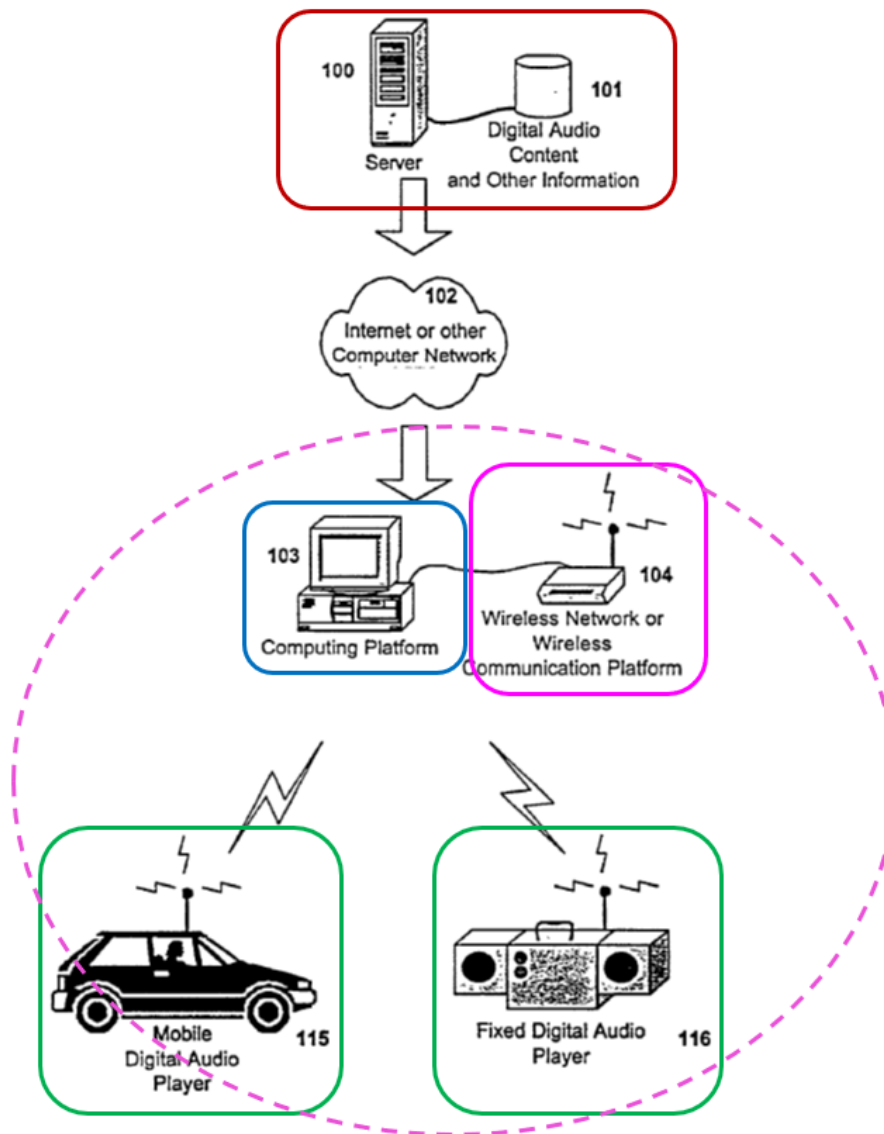


EX1003, ¶330 — EX1007, FIG. 1 (Annotated)

H. Dependent Claim 13

Spurgat in view of Gassho renders obvious Claim 13.

Spurgat discloses multiple digital audio players, such as 115 and 116, in a networked audio system as shown in annotated FIG. 1, (*“form a group with at least a first playback device of a networked audio system”*), and that each digital audio player in that group synchronizes digital audio content, such as playlists, with other digital audio players, which allows a user to move from one player to another and able to listen to “the same music and playlist in a seamless manner” (*“play back audio content in synchrony with at least the first playback device”*). EX1007, [0036], [0043], [0099]; EX1003, ¶342. A POSITA would have found it obvious to have the players play in synchrony, as disclosed by Spurgat, after connected to the WLAN, according to Gassho. EX1003, ¶343.



EX1003, ¶343 — EX1007, FIG. 1 (Annotated)

I. Independent Claim 14

1. Spurgat discloses [14.p].

Spurgat discloses [14.p], which is substantively the same as [1.c] and [1.d].

See Section VIII.B.3, EX1003, ¶344.

2. Spurgat in view of Gassho discloses all remaining elements of Claim 14.

Spurgat and Gassho disclose or suggest all remaining elements of Claim 14, which are substantively the same as [1.e.1]-[1.e.5]. Spurgat in view of Gassho renders obvious Claim 14 for similar reasons explained for Claim 1. *See* Sections VIII.B.4, EX1003, ¶344.

J. Dependent Claims 15-19

Spurgat in view of Gassho renders obvious Claims 15-18, which are substantively the same Claim 2, and 4-6, respectively, and Claim 19 which is substantively the same as Claims 10 and 11. *Supra* Section VIII.C, G, EX1003, ¶344.

K. Independent Claim 20

1. Spurgat in view of Gassho discloses a “method” [20.p].

Spurgat and Gassho disclose or suggest a method for setting up an audio playback device on a secured WLAN. EX1007, [0021]; *see also* EX1006, [0003], [0005].

2. Spurgat in view of Gassho discloses all remaining elements of Claim 20.

Spurgat and Gassho disclose or suggest all remaining elements of Claim 20, which are the same as [1.e.1]-[1.e.5]. Spurgat in view of Gassho renders obvious Claim 20 for similar reasons explained for Claim 1. *See* Sections VIII.B.4, EX1003, ¶344.

IX. DISCRETIONARY DENIAL DOES NOT APPLY

A. 35 U.S.C. § 325(d)

Under the two-part *Advanced Bionics* framework, the Board should not exercise discretion to deny institution under 35 U.S.C. § 325(d).

The Board should not deny institution under §325(d) because no “same or substantially the same” grounds or arguments were previously presented to the USPTO. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential). Gassho and Richenstein were not presented or considered during prosecution. *See generally* EX1002.⁴ Had the Examiner known of the references above, he would not have allowed the ’883 patent to issue, at least because Gassho expressly discloses the features that led to the allowance. *See* EX1002.

An application related to Spurgat (U.S. Patent Application Pub. No. 2002/0173273) as well as Rector, were submitted among approximately 1,500 references cited in PO’s seventeen IDSs.⁵ EX1002, 698, 703. The Examiner did not rely on either to reject or otherwise discuss any claims. *See generally* EX1002.

Here, Spurgat is used exclusively in combination with Gassho, a reference never presented during prosecution. Furthermore, as explained above, Rector

⁴ All statements about the prosecution history are to the best of Petitioner’s knowledge.

⁵ Indeed, the relevant IDS disclosed a total of 349 references. EX1002, 697-731.

anticipates almost all of the challenged claims. Therefore, to the extent that Rector and certain disclosures of Spurgat were before the Office during prosecution, the Examiner materially erred by overlooking or not appreciating their relevance to the challenged claims, as described herein. *Advanced Bionics*, IPR2019-01469, Paper 6 at 8 (P.T.A.B. Feb. 13, 2020) (“An example of a material error may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims.”); *STMicroelectronics, Inc. v. Trustees of Purdue Univ.*, IPR2022-00309, Paper 14 at 12-13 (P.T.A.B. July 6, 2022) (examiner erred by not appreciating that IDS reference disclosed features recited in the challenged claims).

B. 35 U.S.C. § 314(a)

No discretionary denial is warranted under §314(a) either, as the six *Fintiv* factors favor institution under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) and the USPTO’s *Interim Procedure for Discretionary Denials*, 8-9 (June 21, 2022) (“*Interim Procedure*”).

Factor 6 requires institution because this Petition presents anticipation and single reference obviousness grounds based on two different references each disclosing or suggesting all limitations of every challenged claim, presenting “a compelling unpatentability challenge,” effectively eliminating the need to evaluate

other *Fintiv* factors. *Interim Procedure* at 4-5. To the extent relevant, Factors 2-4 also favor institution.

Factor 2: trial will likely occur *after* the deadline for an FWD.⁶ *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 15 (PTAB Dec. 1, 2020) (precedential). The median and average time to trial in Delaware for jury trial cases is 32 and 34 months, respectively, putting trial between two and four months *after* the deadline for an FWD. EX1033; *see Interim Procedure*, 8-9 (valuing the time to trial statistics over scheduled trial dates).

Even considering the actual schedule, a trial is likely to be after or at least coincide with the FWD. Trial was initially set for May 2026. EX1036, 13. However, nearly a year after the original complaint, PO amended its complaint to add a new party and a new patent, prompting a joint stipulation from Petitioner and Patent Owner indicating that they “anticipate jointly requesting around a 90-day extension to all current dates,” but only requesting the Court “extend the most imminent deadlines” so as to give the new party a chance to weigh in on the schedule. EX1037; *see also* EX1038 (approving stipulation). Accordingly, the Court will likely reschedule the rest of the case, putting trial after August 2026, when the FWD is expected. Even just the “significant uncertainty around the scheduled trial date” here

⁶ Petitioner expects an FWD in August 2026.

should favor institution. *See Sand Revolution II v. Continental Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 8-10 (Jun. 16, 2020) (informative).

Factor 3: investment in the co-pending litigation has been minimal. The parties have only served initial contentions and the district court has issued no substantive orders related to the '883 Patent. Furthermore, claim construction has not begun and will not have concluded by the deadline for an institution decision, thus favoring institution.⁷ *See PEAG LLC v. Varta Microbattery GmbH*, IPR2020-01214, Paper 8 at 17 (PTAB Jan. 6, 2021). Furthermore, Petitioner filed this Petition only half a month after PO's supplemental contentions, which included an identification of asserted claims. *See Fintiv*, Paper 11 at 11 (PTAB Mar. 20, 2020) (filing petition "promptly after becoming aware of the claims being asserted" weighs in favor of institution).

Factor 4: Petitioner will not pursue the same grounds in the district court litigation, if the IPR is instituted, which favors institution. *Sand Revolution*, Paper 24 at 7.

Factor 1 is neutral as no stay has been requested or granted. *Fintiv*, Paper 15 at 12 (PTAB Mar. 13, 2020).

⁷ The parties' joint *Markman* brief is due on July 14, 2025. EX1038. Based on previous cases from Judge Ranjan, a *Markman* order is unlikely to issue until September 2025, a month *after* the deadline for an institution decision. *See* EX1034 (over two months between *Markman* briefing and *Markman* order), EX1035 (same).

Although Petitioner is the also defendant in the litigation, **Factor 5** does not warrant denial. Nor does the existence of the Google Litigation, to which Petitioner is not a party, warrant discretionary denial. *See Fintiv*, Paper 11 at 13-14 (“If a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact against exercising discretion to deny institution”). No exception to this rule is applicable because the Google Litigation is in its infancy. At this point, the parties have yet to file a proposed scheduling order for the case. Accordingly, Petitioner has no reason to believe that the same or substantially similar issues with respect to the ’883 Patent have been or are about to be litigated in the Google Litigation. EX1040.

X. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. Real Party-in-Interest

The real party-in-interest includes Linkplay Technology Inc. and Linkplay Technology Inc., Nanjing.⁸

B. Related Matters

To the best of Petitioner’s knowledge, the ’883 patent is involved in the following co-pending civil action: *Sonos, Inc. v. Linkplay Technology Inc. et al.*, No. 1:24-cv-00131-JNR (D. Del.) (“LP Case”) to which Petitioner is a party, and *Sonos*,

⁸ On December 19, 2024, Patent Owner amended its complaint in the LP Case to add Origin Acoustics LLC as a co-defendant. Origin Acoustics is a customer of Petitioner but is not a real party-in-interest to this IPR.

Inc. v. Google LLC, No. 2:20-cv-00169-JAK (C.D. Cal.) (“Google Litigation”) to which Petitioner is not a party.

C. Lead and Back-up Counsel and Service Information

Petitioner identifies the following lead and back-up counsels:

Lead Counsel	Back-up Counsel
Jiayu (Mandy) Song (Reg. No. 69,583) mandy.song@bayes.law Bayes PLLC 8260 Greensboro Drive, Suite 625 McLean, VA 22102 Tel: 703-995-9887 Fax: 703-821-8128	Andrew Landers Ramos (Reg. No. 76,865) andrew.ramos@bayes.law Bayes PLLC 8260 Greensboro Drive, Suite 625 McLean, VA 22102 Tel: 703-995-9887 Fax: 703-821-8128 Gang (Gavin) Ye (Reg. No. 69,585) gavin.ye@bayes.law Bayes PLLC 8260 Greensboro Drive, Suite 625 McLean, VA 22102 Tel: 703-995-9887 Fax: 703-821-8128

Petitioner consents to electronic service at Linkplay-Sonos-IPR@bayes.law, as well as the above email addresses.

D. Standing

Petitioner certifies under 37 C.F.R. § 42.104(a) that the ’883 patent is available for IPR, and Petitioner is not barred or estopped from requesting IPR challenging the patent claims on the grounds identified in this Petition.

XI. CONCLUSION

Based on the grounds specified above, IPR of all challenged claims is respectfully requested.

Respectfully submitted,

BAYES PLLC

/Jiayu Song/

Jiayu (Mandy) Song

Registration No. 69,583

Lead Counsel for Petitioner

Date: February 5, 2025
8260 Greensboro Drive, Suite 625
McLean, VA 22102
(703) 995-9887

CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

This Petition complies with the requirements of 37 C.F.R. § 42.24. As calculated by the word count feature of Microsoft Word, it contains 13,899 words, excluding the words contained in the following: Table of Contents, Table of Authorities, List of Exhibits, Mandatory Notices, Certification Under § 42.24(d), and Certificate of Service.

/Jiayu Song/
Jiayu (Mandy) Song
Registration No. 69,583
Lead Counsel for Petitioner

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing **Petition for *Inter Partes* Review**, **the associated Power of Attorney, and Exhibits 1001-1040** are being served on February 5, 2025, by U.S. Priority Express Mail at the following address of record for the subject patent.

135176 – LS3 Sonos
Lee Sullivan Shea & Smith LLP
656 W. Randolph St.
Floor 5W
Chicago, IL 60661

A courtesy copy was also sent via electronic mail to Patent Owner's litigation counsel at the following addresses:

Philip A. Rovner (#3215)
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/Ashley Cheung/
Ashley F. Cheung
Paralegal for Petitioner's Counsel