

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

S.M.R INNOVATIONS LTD and Y.M.R TECH LTD
Patent Owners

Inter Partes Review Case No. IPR2024-01047
U.S. Patent No. 9,699,223

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 9,699,223**

TABLE OF CONTENTS

<i>I. INTRODUCTION</i>	<i>1</i>
<i>II. THE '223 PATENT</i>	<i>1</i>
A. The '223 Patent's Alleged Invention	1
B. The '223 Patent's Prosecution.....	2
C. A Person of Ordinary Skill in the Art ("POSITA").....	3
<i>III. 37 C.F.R. § 42.104 Requirements</i>	<i>3</i>
A. 37 C.F.R. § 42.104(a).....	3
B. Summary of Grounds and Relief Requested	3
C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)	4
<i>IV. THE PRIOR ART</i>	<i>4</i>
A. Zhang.....	4
B. Moore	6
C. Rofheart	7
D. Thornton	8
E. Liversidge.....	8
F. Angelo.....	9
<i>V. GROUND 1: CLAIMS 1, 5, 8, 10-11, 14-16, 18-20, AND 22 ARE OBVIOUS OVER ZHANG, Moore, AND ROFHEART</i>	<i>10</i>
A. Claim 1(Pre) - A method of routing media data stream, comprising: ..	10
B. Claim 1(a) - wirelessly receiving at a mobile device, from an external source via a local wireless communication network, a media data stream transmitted according to a streaming protocol and comprising media content selected from a group consisting of: audio content and video content;.....	10
1. Zhang's Mobile Device Discovers Helper Servers With Better Streaming Media Playback Capabilities	11
2. Wirelessly Receiving From an External Source	12
3. Streaming ... According to Said Streaming Protocol.....	15

4. Streaming Media Content	17
5. Motivation to Combine Zhang and Moore	17
C. Claim 1(b) - scanning said local wireless communication network using said mobile device to identify a plurality of devices, identified as compatible to handle said media content, said plurality of devices are wirelessly connected to said local wireless communication network and wirelessly announce an availability for accepting a routed media via said local wireless communication network;.....	21
1. Zhang’s Teachings – Scanning and Identifying Compatible Devices to Handle Media Content.....	21
2. Zhang’s Helper Servers Wirelessly Announce Their Availability	23
3. Rofheart Teaches Locating Multiple Helper Devices.....	26
4. Motivation to Combine Zhang, Moore, and Rofheart	29
D. Claim 1(c) - selecting, based on a user interaction made with said mobile device and while said media data stream is streamed to said mobile device from said external source according to said streaming protocol, one of said plurality of devices;	32
1. Rofheart Teaches Selecting One of a Plurality of Devices Based on User Interaction with a Mobile Device	33
2. Motivation to Combine Zhang and Rofheart.....	35
E. Claim 1(d) – setting up a wireless communication link with said selected compatible device via said local wireless communication network;.....	38
F. Claim 1(e) - causing a routing of said media data stream of media content to said selected device via said wireless communication link for streaming said media data steam according to said streaming protocol for presentation of said media content by a media player of said selected device.	41
1. ’223 Patent’s Media Player.....	42
2. Zhang’s Media Player	42
3. Motivation to Combine Zhang and Moore	43
G. Claim 5	44
H. Claim 8	46
I. Claim 10	47
J. Claim 11	48
K. Claim 14(Pre).....	49
L. Claim 14(a).....	49

1. Zhang’s Teachings	49
2. Moore’s Teachings	50
3. Motivation to Combine Zhang and Moore	51
M. Claim 14(b)	52
1. Zhang’s Teachings	52
2. Rofheart’s Teachings	52
3. Motivation to Combine Zhang and Rofheart	54
N. Claim 14(c)	55
O. Claim 14(d)	55
P. Claim 15	57
Q. Claim 16	57
R. Claim 18	57
S. Claim 19	58
T. Claim 20	59
U. Claim 22(Pre)	59
1. Zhang’s Teachings	60
2. Rofheart’s Teachings	60
V. Claim 22(a)	61
W. Claim 22(b)	61
X. Claim 22(c)	62
Y. Claim 22(d)	62
Z. Claim 22(e)	62
AA. Claim 22(f)	62
<i>VI. GROUND 2: CLAIMS 7 AND 13 ARE OBVIOUS OVER ZHANG, MOORE, ROFHEART, AND THORNTON</i>	<i>62</i>
A. Claim 7	62
B. Claim 13	65
<i>VII. GROUND 3: CLAIM 9 IS OBVIOUS OVER ZHANG, MOORE, ROFHEART, AND LIVERSIDGE</i>	<i>66</i>
A. Claim 9	66
<i>VIII. GROUND 4: CLAIM 10 IS OBVIOUS OVER ZHANG, MOORE, ROFHEART, AND ANGELO</i>	<i>69</i>

A. Claim 10	69
<i>IX. THE BOARD'S DISCRETION UNDER 35 U.S.C. § 314(a).....</i>	71
<i>X. CONCLUSION</i>	72
<i>XI. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)</i>	73
A. Real Party-In-Interest.....	73
B. Related Matters	73
C. Lead and Back-Up Counsel.....	73

TABLE OF AUTHORITIES

Cases

<i>Google LLC v. Jawbone Innovations, LLC</i> , IPR2022-01124, Paper 11 (PTAB Jan. 3, 2023)	72
<i>Microsoft Corp., v. WSOU Investments, LLC</i> , IPR2021, 00930, Paper 8 (PTAB Dec. 2, 2021)	72
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)	4

Statutes

35 U.S.C. § (e)(pre-AIA)	passim
35 U.S.C. §§ 102(a) and (e)(pre-AIA)	9

Regulations

37 C.F.R. § 42.100(b)	4
37 C.F.R. § 42.104(b)	3
37 C.F.R. § 42.8(b)	73
37 C.F.R. §§ 42.6(e)	82
37 C.F.R. §42.24	81

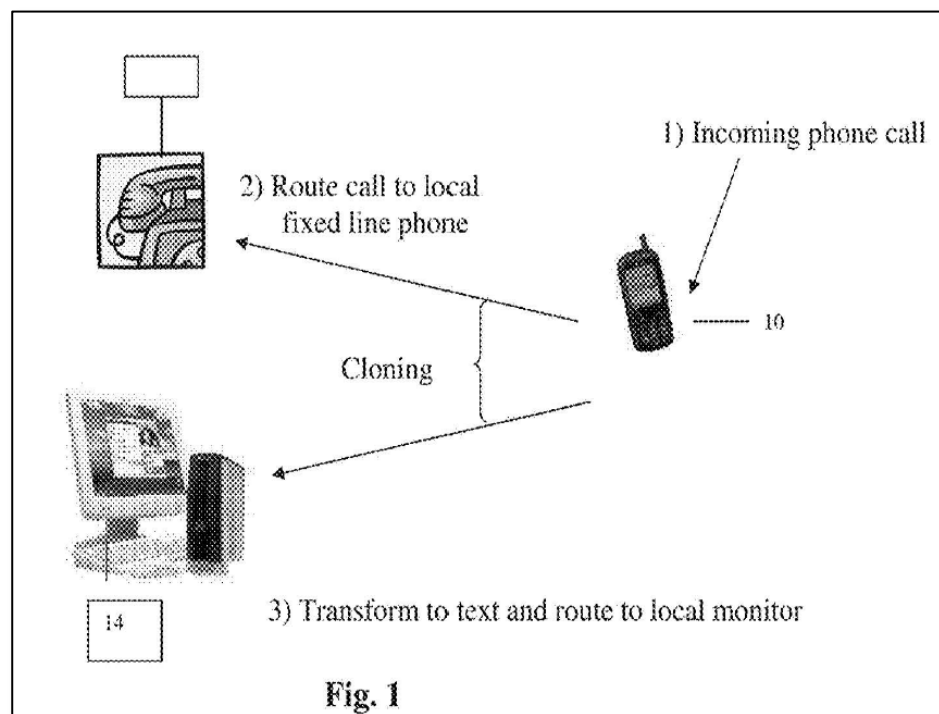
I. INTRODUCTION

Petitioner Apple Inc. requests *Inter Partes* Review of Claims 1, 5, 7-11, 13-16, 18-20, and 22 (collectively, the “Challenged Claims”) of USPN 9,699,223 (the “’223 Patent”).

II. THE ’223 PATENT

A. The ’223 Patent’s Alleged Invention

The ’223 Patent is directed to streaming media (e.g., audio and/or video) communications where media streamed to a “limited capability device” (e.g., mobile phone) is routed to a “more capable device” (e.g., standalone display, speakers, etc.). ’223 *Patent* (Ex. 1001), 1:20-24, 4:21-54. Fig. 1 below depicts routing an incoming phone call originally received at a mobile phone to a fixed line phone:



'223 Patent, Fig. 1. Described scenarios include routing streaming audio (e.g., music or voice calls) to a speaker and routing streaming video to a TV or computer monitor. *Id.*, 10:10-41.

B. The '223 Patent's Prosecution

The '223 Patent claims its earliest priority to a US provisional application (60/398,077) filed July 25, 2002. '223 Patent, 1:7-14. For purposes of this Petition only, Petitioner applies July 25, 2002, as the priority date for the Challenged Claims.

The Challenged Claims require a mobile device that wirelessly receives a media data stream, scans a local wireless network for a device that can handle the media data stream, selects a compatible device, sets up a wireless link with the compatible device, and routes the media data stream from the mobile device to the compatible device according to a streaming protocol such that the content can be played by the compatible device's media player. *See, e.g., '223 Patent*, Claim 1. During prosecution, the Examiner concluded that the closest prior art references—Hamberg, Mousseau, and Ortiz—failed to teach streaming media from a mobile device to a compatible device according to a streaming protocol.'223 FH, 324 (Notice of Allowability). As set forth below, streaming media from a mobile device to compatible device according to a streaming protocol was known in the prior art.

C. A Person of Ordinary Skill in the Art (“POSITA”)

A POSITA at the time of the ’223 Patent would have had a master’s degree in computer engineering, electrical engineering, or a related field, with at least 2 years of experience with wireless communications. Additional education or experience might substitute for the above requirements. *Dec.*, ¶¶28-30.¹

III. 37 C.F.R. § 42.104 REQUIREMENTS

A. 37 C.F.R. § 42.104(a)

Apple certifies the ’223 Patent is available for IPR and Apple is not barred or estopped from requesting IPR challenging the claims of the ’223 Patent. Apple is not the owner of the ’223 Patent, has not filed a civil action challenging the validity of any claim of the ’223 Patent, and this Petition is filed less than one year after Apple was served with a complaint alleging infringement of the ’223 Patent.

B. Summary of Grounds and Relief Requested

In view of the prior art and evidence presented, IPR should be instituted and the Challenged Claims cancelled. 37 C.F.R. § 42.104(b)(1)-(2).

¹ All citations to “Dec.” are to paragraph numbers in Ex. 1003, Declaration of Dr. Sayfe Kiaei.

Proposed Grounds of Unpatentability	
<u>Ground 1</u>	Claims 1, 5, 8, 10-11, 14-16, 18-20, and 22 are obvious under § 103(a) over <i>Zhang, Moore, and Rofheart</i>
<u>Ground 2</u>	Claims 7 and 13 are obvious under § 103(a) over <i>Zhang, Moore, Rofheart, and Thornton</i>
<u>Ground 3</u>	Claim 9 is obvious under § 103(a) over <i>Zhang, Moore, Rofheart, and Liversidge</i>
<u>Ground 4</u>	Claim 10 is obvious under § 103(a) over <i>Zhang, Moore, Rofheart, and Angelo</i>

Sections V-VIII map the evidence to each element of the Challenged Claims.

37 C.F.R. § 42.104(b)(4)-(5).

C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts (i.e., the *Phillips* standard). 37 C.F.R. § 42.100(b); 83 Fed. Reg. 197 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). Petitioner applies the plain and ordinary meaning of all claim terms as understood by a POSITA. Petitioner does not waive any argument in other proceedings that claim terms in the '223 Patent are indefinite or that additional terms may need construction.

IV. THE PRIOR ART

A. Zhang

Zhang was filed November 9, 2001, qualifying as prior art to the '223 Patent under at least 35 U.S.C. § 102(e). *Zhang* (Ex. 1004). *Zhang* was neither cited nor considered during prosecution of the '223 Patent.

Zhang teaches a mobile device that can connect with and transfer media content to a network of connected helper servers (“helper environment”) to expand and improve the limited media playback capabilities of the mobile device. *Zhang*, 2:16-19; *Dec.*, ¶¶72-74. *Zhang* explains that this helper environment “supports a wide variety of capabilit[ies]... wherein the [mobile] devices remain the focus for both control and data.” *Zhang*, 2:26-30.

Zhang refers to “handheld” and “mobile” devices interchangeably. *Zhang*, 1:12-18, 3:25-31; *Dec.*, ¶¶72, 93. Similarly, *Zhang* refers to a more capable media device (e.g., displays, speakers, etc.) as a “helper device,” “helper server,” and “local device” interchangeably. *Zhang*, 3:25-4:45, 5:58-6:44 (noting that a “helper server” is sometimes used to refer to a process running within a “helper device”), 7:1-21, 8:13-28; *Dec.*, ¶¶72, 93. Petitioner uses “mobile device” and “helper server” throughout for clarity.

Because *Zhang*, like the ’223 Patent, discloses routing media between electronic devices, *Zhang* is in the same field of endeavor as the ’223 Patent. *Compare Zhang*, 1:8-10, with ’223 Patent, 1:20-24; *Dec.*, ¶¶72-74.

Further, both *Zhang* and the ’223 Patent attempt to improve upon limitations with streaming media to mobile devices by re-routing media to devices with better media playback capabilities. *Compare Zhang*, 2:16-19, 3:25-31, 4:35-45, 8:13-22, 10:58-65, Figs. 1, 4-5, 6A-6B, with ’223 Patent, 1:20-27, 1:33-48, 5:23-41, 9:44-51.

Therefore, *Zhang* is reasonably pertinent to a problem described by the '223 Patent and is analogous art. *Dec.*, ¶¶72-74.

B. Moore

Moore was neither cited nor considered during prosecution of the '223 Patent. *Moore* was filed July 19, 2002, qualifying as prior art to the '223 Patent under at least 35 U.S.C. § 102(e). *Moore* (Ex. 1005).

Moore teaches a portable audio device that receives streaming audio and re-routes it to a wireless speaker. *Moore*, 1:41-2:19; *Dec.*, ¶¶75-77. Said streaming audio content or other packet data may originate from the “Web,” for example. *Moore*, 8:4-9, 8:15-18, 8:54-67. In one specific embodiment, *Moore* extracts the lower frequency components of the streamed audio signal and re-routes them to an external audio system via a wireless link to take advantage of external audio system’s larger speakers and better bass frequency (e.g., below 100 Hz) reproductions. *Moore*, 2:51-3:34, 1:20-37, 4:47-58; *Dec.*, ¶¶75-77.

Because *Moore*, like the '223 Patent, discloses routing media between electronic devices, *Moore* is in the same field of endeavor as the '223 Patent. *Compare Moore*, 1:6-11, 1:41-55, 2:10-18, 3:15-34, 4:21-29, 8:4-8, 8:15-25, Figs. 1, 5, *with '223 Patent*, 1:20-24; *Dec.*, ¶¶75-77. Accordingly, *Moore* is analogous art to the '223 Patent.

C. Rofheart

Rofheart was neither cited nor considered during prosecution of the '223 Patent. *Rofheart* was filed October 10, 2000, qualifying as prior art to the '223 Patent under at least 35 U.S.C. § 102(e). *Rofheart* (Ex. 1006).

Rofheart teaches a local wireless network, local wireless device, and programming instructions for enabling a user to locate and select one or more of a plurality of compatible remote wireless devices, and to route data streams between the local wireless device and said one or more of a plurality of remote wireless devices. *Rofheart*, 2:4-16, 17:13-37, 14:14-15:22, Fig. 3; *Dec.*, ¶¶78-80. *Rofheart* further teaches that the user selects remote wireless devices using a touch screen interface displaying a plurality of remote wireless devices. *Rofheart*, 18:54-58, 28:22-57, 30:10-18, Figs. 9-10; *Dec.*, ¶¶78-80.

Because *Rofheart*, like the '223 Patent, discloses routing media between electronic devices, *Rofheart* is in the same field of endeavor as the '223 Patent. Compare *Rofheart*, 2:4-16, 17:13-55, 26:18-23, 28:22-57, 30:25-30, Fig. 9 with '223 Patent, 1:20-24; *Dec.*, ¶¶78-80. Accordingly, *Rofheart* is analogous art to the '223 Patent.

D. Thornton

Thornton was neither cited nor considered during prosecution of the '223 Patent. *Thornton* was filed September 14, 2001, qualifying as prior art to the '223 Patent under at least 35 U.S.C. § 102(e). *Thornton* (Ex. 1007).

Thornton teaches routing continuous media streams (as multiple copies) from a first user across a plurality of devices simultaneously. *Thornton*, Abstract, 3:56-4:11, 9:6-9:47, 5:4-54, 11:30-38; *Dec.*, ¶¶81-83.

Because *Thornton*, like the '223 Patent, discloses routing media between electronic devices, *Thornton* is in the same field of endeavor as the '223 Patent. *Compare Thornton*, 1:8-13, 6:26-42, 3:56-4:11, 5:4-54, Abstract, 9:6-47, 11:14-29, Fig. 1, with '223 Patent, 1:20-24; *Dec.*, ¶¶81-83. Accordingly, *Thornton* is analogous art to the '223 Patent.

E. Liversidge

Liversidge was neither cited nor considered during prosecution of the '223 Patent. *Liversidge* was filed December 18, 2000, and published June 20, 2002, qualifying as prior art to the '223 Patent under at least 35 U.S.C. §§ 102(a) and (e). *Liversidge* (Ex. 1008).

Liversidge teaches that a specific user's associated "previously defined" personal profile may be created, edited, and/or deleted to "define respective communications preferences of the user" including a user's location and which

devices a user prefers to communicate through at said location. *Liversidge*, [0062], [0090]-[0094]; *Dec.*, ¶¶84-86.

Because *Liversidge*, like the '223 Patent, discloses routing media between electronic devices, *Liversidge* is in the same field of endeavor as the '223 Patent. *Compare Liversidge*, [0003], [0017], [0020], [0062]-[0065], [0070], [0076], [0078]-[0079], [0088]-[0094], [0108], [0133], [0183], [0185], Fig. 1, *with '223 Patent*, 1:20-24; *Dec.*, ¶¶84-86. Accordingly, *Liversidge* is analogous art to the '223 Patent.

F. Angelo

Angelo was neither cited nor considered during prosecution of the '223 Patent. *Angelo* was filed September 24, 2001, qualifying as prior art to the '223 Patent under at least 35 U.S.C. § 102(e). *Angelo* (Ex. 1009).

Angelo teaches using real-time encryption to communicate the secured transmission of audio, video, or a combination of audio and video streams between portable devices. *Angelo*, Abstract, [0004], [0009]-[0010], [0014]-[0026], Figs. 3, 6; ¶¶87-89.

Because *Angelo*, like the '223 Patent, discloses routing media between electronic devices, *Angelo* is in the same field of endeavor as the '223 Patent. *Compare Angelo*, Abstract, [0004], [0009]-[0010], [0016]-[0021], [0029], [0031], *with '223 Patent*, 1:20-24; *Dec.*, ¶¶87-89. Accordingly, *Angelo* is analogous art to the '223 Patent.

V. GROUND 1: CLAIMS 1, 5, 8, 10-11, 14-16, 18-20, AND 22 ARE OBVIOUS OVER *ZHANG*, *MOORE*, AND *ROFHEART*

A. Claim 1(Pre) - A method of routing media data stream, comprising:

To the extent the preamble is limiting, *Zhang* in view of *Moore* and *Rofheart* teaches a mobile device wirelessly receiving streaming audio from a source on the Internet and re-routing that audio stream to a wireless speaker selected by the user pursuant to *Rofheart*'s teachings. *See* Claim 1(a). As in the '223 Patent, the *Zhang-Moore-Rofheart* combination improves the user experience, utilizing wireless speakers with improved capabilities compared to the limited capabilities of speakers in the mobile device. *See* Claim 1(e).

B. Claim 1(a) - wirelessly receiving at a mobile device, from an external source via a local wireless communication network, a media data stream transmitted according to a streaming protocol and comprising media content selected from a group consisting of: audio content and video content;

Zhang teaches that a mobile device user can elect to play streaming media on a “helper server” with better media playback capabilities than the mobile device possesses. While *Zhang* does not expressly describe media streamed to the mobile device that is then re-routed to a helper server, this concept was known in the art. For example, *Moore* teaches a mobile device receiving a media data stream (e.g., streaming audio) from an external source (e.g., Web server) via a network such as a WLAN (e.g., utilizing IEEE 802.11 or other protocol(s)) and re-routing the streaming audio to a wireless speaker connected via the same WLAN.

As set forth below, a POSITA would have been motivated to modify *Zhang* pursuant to *Moore* to receive streaming audio (*media data stream*)² from a Web server (*external source*) at *Zhang*'s mobile device and reroute the streaming media to *Zhang*'s helper server in the form of a wireless speaker.

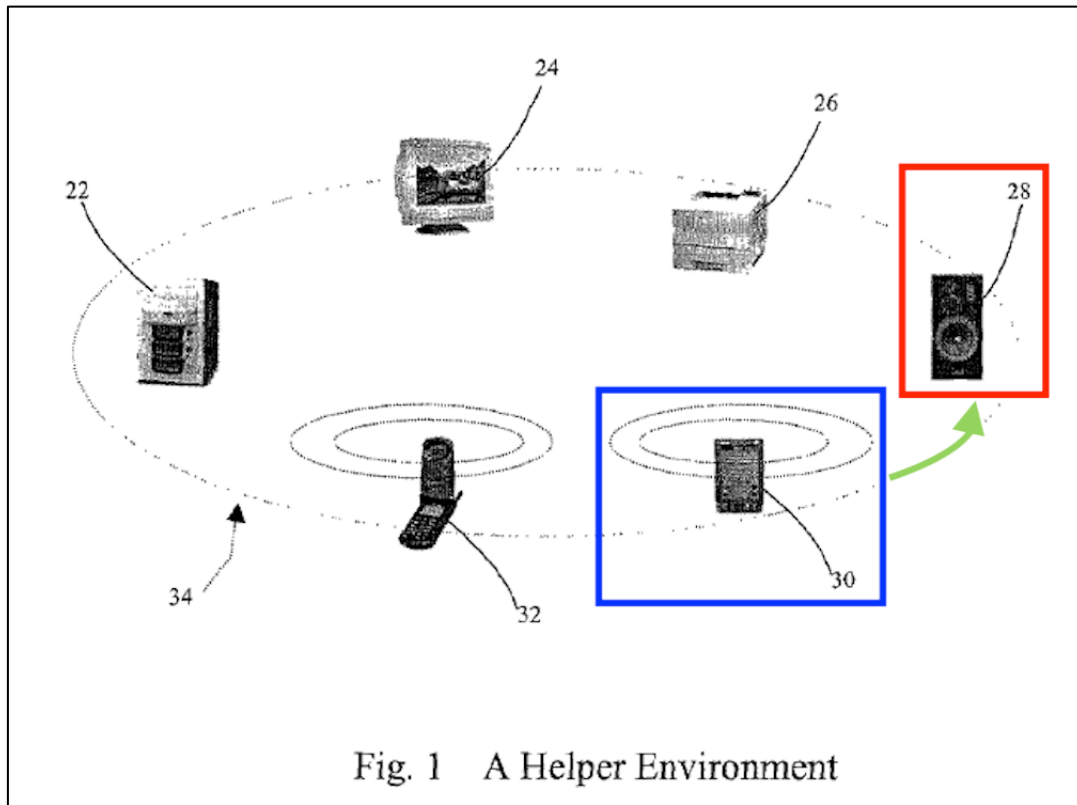
1. *Zhang's Mobile Device Discovers Helper Servers With Better Streaming Media Playback Capabilities*

Zhang “provide[s] a framework in which handheld mobile devices can identify and use their environment, the devices around them, to expand their limited capabilities[.]” *Zhang*, 2:16-19, 3:25-43, 4:35-45, Fig. 1. Within “helper environment 34[.]” a mobile device (e.g., PDA [personal digital assistant] 30, cellular phone 32, digital camera, MP3 player) “can use the devices around them to extend their limited capabilities[.]” using “helper services” offered by “helper servers[.]” including storage device 22, display device 24, printing device 26, and audio device 28. *Zhang*, 3:25-43, 4:35-38, 8:50-56; *Dec.*, ¶¶92-93.

Zhang teaches that helper servers display/render media content including audio and/or video content, depending on which helper server(s) are utilized. *Zhang*, 3:25-43 (teaching “audio device 28” is a helper server), 4:1-8 (teaching transferring content to a helper server), 4:32-45; *Dec.*, ¶¶94-95. Fig. 1 is annotated below to highlight an exemplary scenario in which *Zhang*'s PDA 30 (blue) uses wireless

² Corresponding claim language indicated with italics in parentheses.

speaker 28 (red) to play streaming audio via wireless network 34 (green, in relevant part):



Zhang, annotated Fig. 1.

2. *Wirelessly Receiving From an External Source*

a) *Zhang-Moore Overview*

Zhang expressly teaches streaming media on a helper server and using the mobile device to control the stream. *Zhang*, 8:13-29 (“[W]hen the user data is displayed on the helper device, the user can use the handheld device . . . to remotely control the display of the data” and, “for **streaming** data, the user may issue ‘stop’, ‘resume’ and ‘fast forward’ commands to the server.”). *Zhang* also teaches that

media played on a helper server can be in the form of “actual data or a URL to the data.” *Zhang*, 7:14. Although *Zhang* teaches that it may be more efficient for the helper server to retrieve streaming content from the web by processing a URL, non-Internet enabled³ helper servers are not capable of processing URLs and must instead receive streaming data from a device on the local wireless network. *Zhang*, 7:14-21; *Dec.*, ¶¶96. Therefore, streaming data from the mobile device to a helper server provides greater choice of helper servers, improving the capabilities of *Zhang*’s system. *Dec.*, ¶¶96. As set forth below in detail, a POSITA would have been motivated to modify *Zhang* pursuant to *Moore* to receive streaming media (e.g., audio) from an external source (e.g., a Web server) at a mobile device and reroute the streaming media to a helper server (e.g., a wireless speaker). *See* Section V.B.5; *Dec.*, ¶¶96, 105-11.

³ “Non-Internet enabled device” is understood to mean a device lacking the hardware and/or software necessary to directly retrieve content from Internet-based services (e.g., Web servers), but can still utilize a wireless local area network to share resources and communicate with other devices. *Dec.*, n.3 and ¶¶96.

a) ***Moore* Teaches Streaming Audio From Web Server to Mobile Device and Routing That Audio to a Wireless Speaker**

Moore teaches audio playback system 10 including portable audio device 12 and external audio system 14. In one embodiment, portable audio device 12 splits out the bass components of a streaming audio signal and sends at least this low frequency audio signal “to the external audio system 14 over wireless link 16.” *Moore*, 4:59-64 (referring to the bass component as an “enhancement signal”); *see also id.*, 2:51-62 (explaining that the primary audio is played via speakers 22 of portable device 12 while a second audible signal (i.e., the low frequency bass components) are played via speakers 32 of external audio system 14). A POSITA would have understood that *Moore* also contemplates sending the entire audio content signal to the external audio system’s speakers. *Dec.*, ¶97. *Moore* teaches routing “***at least*** the lower-frequency components” from a mobile device lacking the “frequency range of full-size speakers” to an “audio system[] employing full-size speakers” to produce “***full range*** sound” to improve the streaming audio playback experience. *Moore*, 1:25-26, 1:41-44, 3:4-24; *Dec.*, ¶97. Thus, a POSITA would have understood *Moore*’s teachings are not limited to sending only the lower (bass) frequencies to an external speaker. *Dec.*, ¶97.

Moore teaches routing a media data stream such as streaming audio from a Web server to a mobile device. For example, *Moore* teaches “the portable device 12

can receive data, such as streaming audio from the Web for local playback through wireless link 16, while simultaneously sending its enhancement signal to audio system 14 for playback enhancement.” *Moore*, 8:4-8, 8:15-25 (describing “receipt of streaming audio or other media content from the Web”); *Dec.*, ¶98. Indeed, *Moore* teaches a wireless gateway 90 that “may be used to route Web or other packet data traffic to and from the portable audio device 12[.]” *Moore*, 8:54-67, 2:10-18.

While some embodiments use a Bluetooth wireless connection between portable audio device 12, audio system 14, and wireless gateway 90, *Moore* also expressly teaches using WLAN (e.g., implemented using the IEEE 802.11b standard). *Moore*, 7:19-25, Abstract; *Dec.*, ¶99. Indeed, it was well known that Web servers provided streaming media content to a mobile device over wireless networks including a WLAN. *Dec.*, ¶99 (discussing *Hartmeier* (Ex. 1011), *Janik* (Ex. 1010), and *Han* (Ex. 1012)).

A POSITA would have understood that the Web server described by *Moore* is an “external source[,]” as claimed, at least because such a Web server is external to the mobile device. *Moore*, 8:36-53, Fig. 5; *Dec.*, ¶100 (noting that mobile devices receiving media data streams from Web servers was well known).

3. *Streaming ... According to Said Streaming Protocol*

Zhang’s “framework” connects devices using a Wireless Local Area Network (WLAN) (via IEEE 802.11 or HomeRF wireless networking standards) and

communicates media using Transmission Control Protocol/Internet Protocol (TCP/IP) communication protocols. *Zhang*, 5:65-6:9, 6:21-23. *Zhang* also teaches that UDP/IP can be used instead of TCP/IP. *Zhang*, 9:51-10:7, 5:29-32. A POSITA would have understood that TCP/IP and UDP/IP are both streaming protocols⁴ and would have been motivated to stream media content in *Zhang*'s system according to either TCP/IP or UDP/IP. *Dec.*, ¶¶101-02.

Notably, streaming media content according to a streaming protocol was the alleged point of novelty missing from the asserted claims prior to allowance. '223 *FH*, 324-25. As noted by the Examiner, none of *Hamberg*, *Mousseau*, or *Ortiz* (cited prior art references) disclose using a streaming protocol, whereas *Zhang* expressly discloses two suitable streaming protocols. '223 *FH*, 324-25; *Zhang*, 5:29-32; *Dec.*, ¶103. A POSITA would have understood that because *Zhang* expressly teaches both TCP/IP and UDP/IP are suitable options, either would have been a suitable choice

⁴ The intrinsic record does not provide express examples of a "streaming protocol." See '223 *Patent*, '223 *Patent FH*. To the extent PO argues a lower-level streaming protocol is required, a POSITA would have understood that many such protocols existed and were well known, and a POSITA would have been motivated to utilize a specific streaming protocol rather than or in addition to TCP/IP or UDP/IP. *Dec.*, ¶¶101-02.

for a streaming protocol for *Zhang's* WLAN. *Dec.*, ¶103 (discussing advantages of TCP/IP and UDP/IP).

4. *Streaming Media Content*

Zhang teaches that a mobile device transmits actual data or a URL to a helper server. *Zhang*, 7:1-13 (noting the mobile device sends the helper server “a flag indicating whether the actual data or a URL will follow”), 8:16-18 (“streaming data”), 10:58-65 (“video streams”). In the proposed combination, *Zhang's* mobile device receives streaming audio from a Web-based source (e.g., retrieved via a URL) and re-routes all or some of that audio to a helper server (e.g., wireless speaker). *Dec.*, ¶104.

5. *Motivation to Combine Zhang and Moore*

A POSITA would have been motivated to modify *Zhang's* mobile device according to *Moore's* teachings (1) to receive an audio stream from an external source (e.g., Web server) via a local wireless communication network (e.g., WLAN) and (2) to reroute some or all of that audio stream to a helper server (e.g., wireless speaker(s)) via the same local wireless communication network (e.g., WLAN). *Dec.*, ¶¶105-11. As discussed above, *Zhang* teaches streaming media in a helper environment including sending “actual data” from a mobile device to a helper server, but does not expressly describe routing a media stream *from an external source through* the mobile device to a helper server. *Moore* teaches a similar mobile device

that receives streaming audio from an external source (e.g., Web server) over a WLAN and reroutes at least part of that audio stream through the mobile device and over the WLAN to a helper speaker. *Moore*, 2:10-19, 8:4-25, 8:54-67, 7:19-25.

Modifying *Zhang* as proposed would have advantageously expanded the types of helper servers compatible with *Zhang*'s system, allowing *Zhang*'s mobile device to receive streaming media (e.g., audio) and reroute all or part of said stream to non-Internet enabled helper servers (e.g., wireless speaker(s)). *Dec.*, ¶¶105-11 (discussing the limited capabilities of wireless speakers at the time). A POSITA would have understood that non-Internet enabled wireless speakers were widely available and would have appreciated the value in permitting their use, rather than limiting *Zhang*'s system to speakers with more sophisticated (and expensive) capabilities of processing URLs and retrieving audio content directly from the Web (Internet-enabled speakers). *Dec.*, ¶¶105-11. Indeed, even though processing a URL at the helper server might be more efficient than using the mobile device as a streaming audio pass through (e.g., by decreasing the overall data communicated over the WLAN), a POSITA would have understood that many users would be willing to accept the lower efficiency in exchange for a larger selection of audio helper servers. *Dec.*, ¶¶105-11.

Additionally, modifying *Zhang*'s mobile device to retrieve audio content by streaming from a Web server would have beneficially avoided the need to store large

amounts of content on the mobile device's local memory. *Dec.*, ¶¶105-11 (explaining that streaming media only requires temporarily storing only a portion of said media content). *Zhang* expressly recognizes that some mobile devices used in its system have “very small memory size” and cannot store large media files internally for playback. *Zhang*, 7:14-21. Accordingly, a POSITA would have understood that streaming to the mobile device and rerouting some or all of the media to a helper server, as taught by *Moore*, avoids the need to store large media files locally on the mobile device, thereby minimizing the small memory concerns identified by *Zhang*. *Dec.*, ¶¶105-11.

Modifying *Zhang* according to *Moore*'s teachings would also have advantageously provided the user more control over what content is streamed to a helper server. *Dec.*, ¶¶105-11. As described above, *Moore* teaches a user can choose to extract low frequencies from an audio stream and send those to an external speaker, while retaining the mid- and high-frequencies for playback on the mobile device speakers. *Moore*, 3:4-34. A POSITA would have understood that enabling such control is most effectively and efficiently realized by streaming a master media stream first to the mobile device, and then rerouting some—or all—of that media stream to a helper server, as *Moore* expressly teaches. *Id.*; *Dec.*, ¶¶105-11. A POSITA would have understood that the helper server retrieving a media stream directly from a Web source (e.g., via a URL) would limit the user's ability to exercise

control that *Moore*'s arrangement provides—retaining some media for playback on the mobile device. *Dec.*, ¶¶105-11 (discussing *Zhang* at 7:1-21, which teaches a helper server retrieving content from the Web via a URL), *Dec.*, ¶¶105-11. Therefore, a POSITA would have understood modifying *Zhang*'s system as proposed would have advantageously provided a user greater control of what media is played at the helper server. *Dec.*, ¶¶105-11.

Further supporting the motivation to combine these references, as set forth in detail above, *Moore* and *Zhang* describe similar systems. *Dec.*, ¶¶105-11. Both describe mobile devices invoking the extended capabilities of helper servers and both describe utilizing those helper servers to improve a media playback experience. *Id.* Given these similarities, a POSITA would have recognized that the benefits realized by *Moore* would have been applicable to *Zhang*. *Id.*

Finally, a POSITA would have had a reasonable expectation of success in modifying *Zhang* according to *Moore*'s teachings. *Dec.*, ¶¶105-11. Such a modification would have utilized *Zhang*'s mobile device which already has wireless capability and which already connects to other devices via WLAN. Specifically, *Zhang* teaches using a networking protocol/standard such as IEEE 802.11 or HomeRF for the WLAN and communication protocols such as TCP/IP or UDP/IP. *Zhang*, 4:42-58. Although a POSITA would have understood that *Zhang*'s mobile device was capable of connecting to a Web server to retrieve streaming media

content, *Zhang* is silent regarding said function. *Dec.*, ¶¶105-11. Therefore, a POSITA would have understood that *Moore's* express teachings of wirelessly connecting a mobile device and a Web server would have made implementing *Moore's* teachings using *Zhang's* mobile device a simple, straightforward modification well within the skillset of a POSITA. *Dec.*, ¶¶105-11. A POSITA would also have expected success based on the similarities between the mobile devices—both in structure and in function—described by *Zhang* and *Moore. Id.* (explaining that both references teach mobile devices such as PDAs, contemplate WLAN connectivity, and contemplate streaming media).

C. Claim 1(b) - scanning said local wireless communication network using said mobile device to identify a plurality of devices, identified as compatible to handle said media content, said plurality of devices are wirelessly connected to said local wireless communication network and wirelessly announce an availability for accepting a routed media via said local wireless communication network;

1. Zhang's Teachings – Scanning and Identifying Compatible Devices to Handle Media Content

As discussed above, *Zhang* teaches that a plurality of helper servers (e.g., audio device 28) (*plurality of devices*) are connected to the framework (via a WLAN using IEEE 802.11 or HomeRF) (*local wireless communication network*). *See* Claim 1(Pre)-1(a); *Zhang*, 3:25-43, 4:35-50. Also discussed above, *Zhang* in view of *Moore* teaches a mobile device that wirelessly receives a media data stream from an external source via a local wireless communication network. *See* Claim 1(a). Further,

Zhang-Moore teaches a mobile device that utilizes helper services of helper servers for playing audio content. *See* Claim 1(a), 1(e).

To utilize the “helper services” provided by *Zhang*’s “helper servers,” *Zhang* teaches that a mobile device scans the framework to locate a nearby helper server that “is capable of displaying the content.” *Zhang*, 3:32-43. *Zhang*’s mobile device performs the following key steps:

- (1) ***Device discovery***: The handheld device identifies the nearby helper servers.
- (2) ***Service query***: The handheld device queries the identified helper servers to determine if they are capable of providing the helper service.
- (3) ***Request transfer***: The handheld device selects a helper server and delegates the task to it.
- (4) ***Remote control***: The helper server returns a remote control interface description to the handheld device.

Zhang, 3:44-56, 6:40-44. The first two steps—“device discovery” and “service query”—identify devices *compatible* (i.e., capable) of handling the media content. *Zhang*, 3:25-64, 4:1-5, 4:35-45 (teaching the mobile device “determine[s] whether there is a helper device in its environment that can fulfill the requested task”). *Zhang* teaches that the service query includes “the MIME type of the user data, the requested service on the data (e.g. displaying, printing or storing), a flag indicating whether the actual data or a URL will follow, the length of the data in bytes, the expected duration of the service, and optionally, authentication information.” *Zhang*,

7:1-13; *Dec.*, ¶113 (explaining MIME type). A POSITA would have understood that such locating and querying teaches or at least renders obvious identifying a helper server compatible to handle media content. *Dec.*, ¶¶113-14.

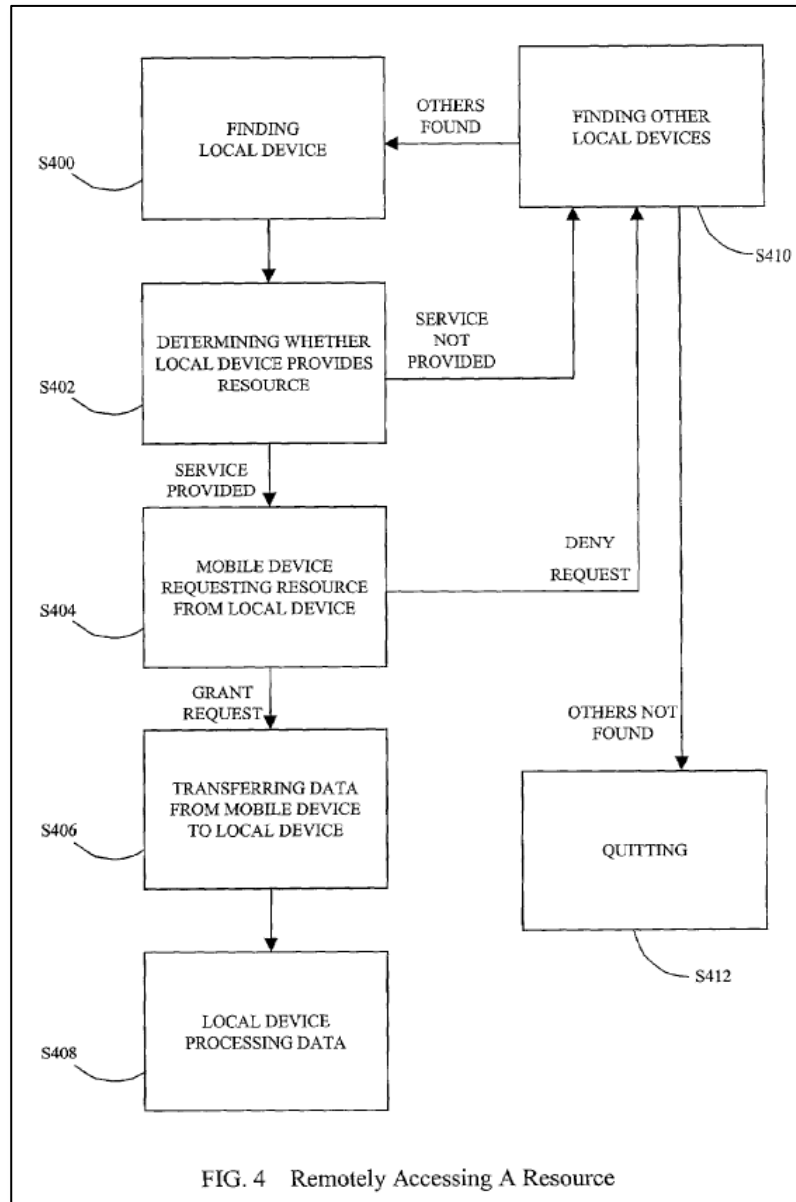
2. Zhang's Helper Servers Wirelessly Announce Their Availability

In *Zhang's* third step, “request transfer,” a helper server responds to the service query, indicating its *availability* to handle the requested service. Specifically, in response to the service query, the helper “server makes the admission decision S648 and informs the client whether its service request can be granted right away, has to be queued[,] or is denied (e.g. not enough total resource on the server or authentication failure) S646.” *Zhang*, 7:22-25, 7:58-60 (“Once a service request is accepted by a helper server S650, the client is notified S610 and can start transferring service data to the server S612.”). A POSITA would have understood that, when *Zhang's* system is implemented via WLAN, its device discovery is done via the network connection over the WLAN (*wirelessly announce an availability for accepting a routed media via said local wireless communication network*). *Dec.*, ¶115.

Whether the request is temporarily queued or granted “right away,” *Zhang's* servers announce their availability, as claimed. Starting with the queued example, *Zhang* teaches an embodiment where a compatible helper server is currently busy, such that the mobile device's request enters a queue, and the user is informed of the

helper service availability *Zhang*, 4:24-31, 6:6-20 (teaching a helper client 92 process running on mobile device 114 that “handles all helper requests 112 on the handheld device 114 by forwarding them to a selected helper server 94, ***notifies the user about service availability for queued requests[.]***”), 6:21-34, 7:22-33 (“when the request has to be queued, ***the client will be notified at a later point when the service becomes available***”), Figs. 5, 6A-6B; *Dec.*, ¶116.

Where a request can be granted right away, the queueing of Fig. 5 is skipped and the helper server’s availability is announced immediately. *Dec.*, ¶117. Fig. 4 (below) depicts the process through which *Zhang*’s mobile device discovers a nearby helper server (S400), ascertains said helper server’s capabilities (S402), transfers data to the helper server (S406), and where said helper server processes/plays said data (S408). A POSITA would have understood and found obvious that the helper server responding with its availability to service the request meets the claimed, “wirelessly announce an availability for accepting a routed media ...[.]” *Dec.*, ¶117.



Zhang, Fig. 4, 3:44-4:8 (describing the same and noting the mobile device can remotely control data playback); *see also* Fig. 5 (also shows the steps of Fig. 4 but includes steps for queueing a request if the helper service is not currently available); Dec., ¶117 (explaining Figs. 4 and 5).

Zhang also teaches identifying a plurality of helper servers. For example, step S410 “finding other local devices” occurs if the result of step S402 “determining whether local device provides resource[s]” is “service not provided” or if step S404 for requesting resources results in the request being denied. *Zhang*, Fig. 4, 3:61-4:8; *Dec.*, ¶118 (noting that Fig. 5 teaches an additional queuing functionality). Therefore, *Zhang*’s process of identifying a plurality of helper servers occurs sequentially if a first device is either incompatible or unavailable. *Dec.*, ¶118. However, *Rofheart*, described below, teaches simultaneously identifying a plurality of compatible devices with which to connect to transfer data, video, and/or audio. To the extent PO argues *Zhang*’s sequential identification of a plurality of devices does not “identify a plurality of devices,” it would have been obvious to modify *Zhang* pursuant to *Rofheart* to simultaneously identify helper servers.

3. *Rofheart Teaches Locating Multiple Helper Devices*

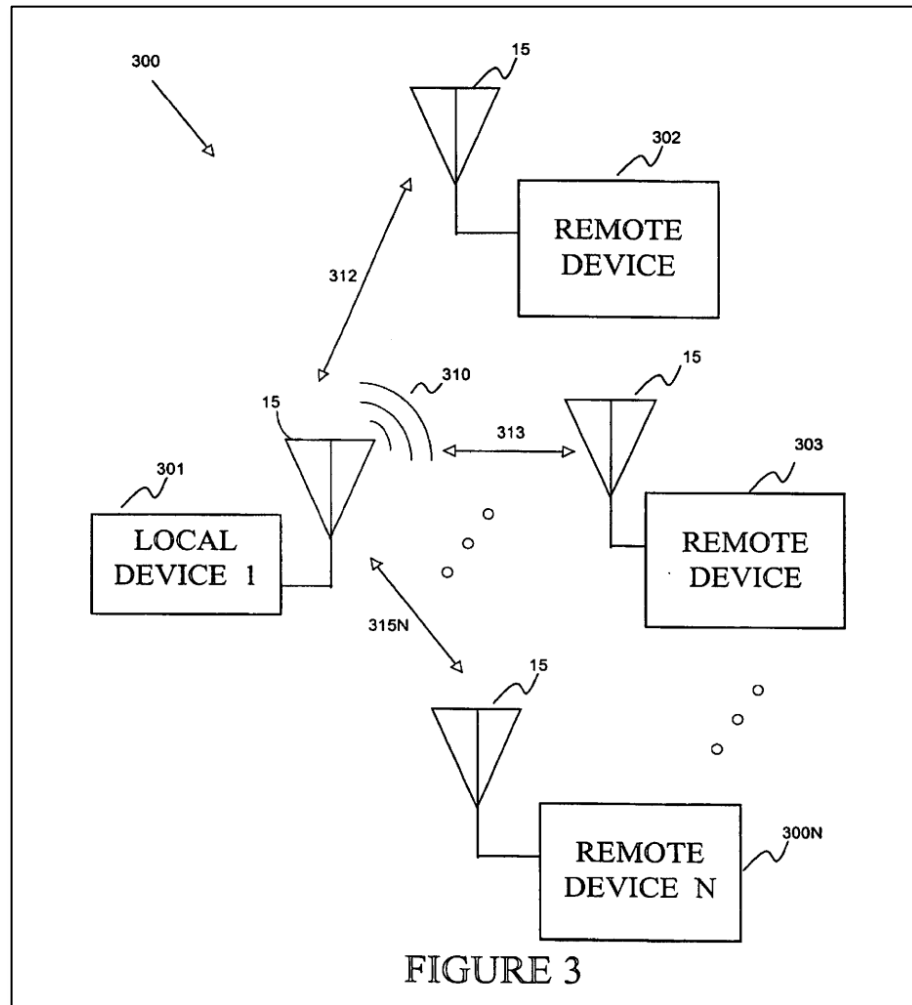
Rofheart acknowledges that “the recent proliferation of hand held computers has made data exchange between wireless devices ... more common.” *Rofheart*, 2:10-12. To improve communications between the growing number of wireless devices, *Rofheart* teaches locating a plurality of devices over a local wireless communication network and a user selecting one or more devices to connect to for transmitting data (e.g., audio, video). *Rofheart*, 2:4-16, 4:61-63; *Dec.*, ¶¶119-21. Specifically, *Rofheart* teaches a local wireless network that carries data streams

between wireless devices. *Rofheart*, 2:4-16 (“The present invention relates generally to ... enabling communications functions in a local wireless device based on a distance between the local wireless device and a remote wireless device.”)⁵, 15:53-55 (“The LAN/PAN communications network 223 and IP network 227 both use electrical, electromagnetic or optical signals that carry digital data streams.”).

Rofheart teaches a local area network (LAN) or personal area network (PAN) implemented using ultra-wide band (UWB) technology. *Rofheart*, 15:23-63; 17:13-18 (teaching wireless network 300 “may be WPAN [wireless PAN], WLAN or some other wireless network”); *Dec.*, ¶120 (explaining that a POSITA would have understood *Rofheart* contemplates a WLAN implemented using UWB technology). *Rofheart* further teaches that its wireless network 300 includes local device 301 that is linked to first remote device 302, second remote device 303, and N number of additional remote devices 300N “via UWB links 312, 313, and 315N respectively.” *Rofheart*, 17:18-22. *Rofheart* teaches that the local and remote devices include hardware for such communications links, including a processor system, UWB

⁵ *Zhang* uses “local device” to indicate a device remote from the handheld/mobile device, such as a “helper server.” *Rofheart* uses “local wireless device” synonymously with *Zhang*’s handheld/mobile device (e.g., PDA). *Dec.*, n.4 and ¶119.

transceiver and antenna. *Rofheart*, 17:38-55. Fig. 3 below depicts wireless network 300:



Rofheart, Fig. 3. The UWB links are “full duplex communications links that carry data, voice, video, or any other analog or digital information in accordance with the present invention.” *Rofheart*, 17:22-25.

In *Rofheart*, each of wireless devices 301 through 300N “may be . . . a mobile telephone, a laptop computer or personal digital assistant (PDA)[.]” *Rofheart*, 17:25-30, 15:50-55. In one embodiment, *Rofheart*’s local and remote devices are

PDAs. *Rofheart*, 26:42-46. In another embodiment, the local device (e.g., local mobile device 901) is a PDA or other mobile device (e.g., laptop, cellular telephone) and the remote devices may be either mobile or stationary. *Rofheart*, 27:46-64, 28:39-57, 2:10-12. Accordingly, *Rofheart*, as exemplified by Fig. 3 above, teaches that a local device identifies and connects with a plurality of remote devices. *Dec.*, ¶¶120-21.

4. Motivation to Combine Zhang, Moore, and Rofheart

A POSITA would have been motivated and found it obvious to modify *Zhang* according to *Rofheart*'s teachings such that *Zhang-Moore-Rofheart* would have identified a plurality of devices compatible to handle *Zhang-Moore*'s media content. *Dec.*, ¶¶122-26.

A POSITA, acknowledging the proliferation of wireless devices, would have recognized the benefit of providing users control to select one or more of a plurality of devices, rather than always connecting to the first identified available compatible device, as taught by *Zhang*. *Dec.*, ¶¶122-26 (explaining that *Zhang*'s native process selects the first available and compatible helper server). Such a modification would have allowed a user to connect to a particular wireless speaker (e.g., based on location or capabilities) instead of simply connecting to the first (e.g., nearest) available device capable of handling media content. *Dec.*, ¶¶122-26. Such a modification would have been the use of a known technique of allowing a user to

select one or more of a plurality of devices and would have benefitted *Zhang-Moore* in the same way it benefits *Rofheart's* similar system. *Dec.*, ¶¶122-26.

A POSITA would have understood that, in addition to the general benefit of allowing a user to choose from among multiple compatible and available helper servers, further implementing *Rofheart's* UWB wireless technology in *Zhang* provides more precise information about the helper server locations, giving users more insight into the available helper servers and more control over rerouting data to the most desirable server. As an initial matter, the claims merely require locating a plurality of helper servers so a user can choose one. A POSITA would have recognized this functionality is satisfied without *Rofheart's* contemplated UWB wireless technology. *Dec.*, ¶¶122-26 (noting that servers spaced sufficiently apart would not require UWB to distinguish and that some scenarios may not require the precise location information that UWB provides). But a POSITA would also have recognized the benefits of implementing *Rofheart's* UWB wireless technology in *Zhang's* system. *Dec.*, ¶¶122-26. *Rofheart* teaches that implementing a WLAN with UWB rather than the IEEE 802.11 standard beneficially enables precisely identifying devices—on the order of centimeters to feet with UWB, rather than ~ 35 feet with 802.11a or 802.11b. *Rofheart*, 15:64-17:55, 18:10-25; *Dec.*, ¶¶122-26. Modifying *Zhang* to use UWB for the WLAN instead of or in addition to 802.11 or HomeRF would have been use of *Rofheart's* known technique of using UWB for

WLAN to improve *Zhang-Moore*'s system in the same way as *Rofheart*'s, improving device location, which improves the user experience, allowing users to choose helper servers based on precise location in the room. *Dec.*, ¶¶122-26 (explaining that users may be frustrated by *Zhang*'s native approach and would prefer to select a device in front of them). In sum, whether UWB is added to *Zhang* or not, modifying *Zhang* pursuant to *Rofheart* beneficially enables more user choice and control. *Id.* But the option to further improve user control in *Zhang* via *Rofheart*'s UWB wireless technology is an additional motivation to combine their teachings. *Id.*

A POSITA would have understood such a modification would have had a reasonable expectation of success because *Zhang-Moore* already teaches the necessary network topology (e.g., plurality of helper servers, mobile devices, connecting to helper servers via WLAN) to support *Rofheart*'s functionality, allowing a user to connect to one or more devices from a plurality of available devices. *Dec.*, ¶¶122-26. Further, such a modification would have been straightforward and well within the abilities of a POSITA, requiring merely minor changes to programming instructions and, in the case of optionally adding *Rofheart*'s UWB, a simple substitution of UWB instead of 802.11/HomeRF hardware. *Dec.*, ¶¶122-26. (explaining that UWB hardware and software/instructions would have been available as off-the-shelf components).

D. Claim 1(c) - selecting, based on a user interaction made with said mobile device and while said media data stream is streamed to said mobile device from said external source according to said streaming protocol, one of said plurality of devices;

As discussed above, *Zhang* in view of *Moore* teaches streaming audio/video from an external source to a mobile device according to a streaming protocol. *See* Claim 1(a). *Zhang-Moore-Rofheart* teaches scanning a local network to identify a plurality of compatible devices and that said helper servers announce their availability. *See* Claim 1(b).

Further, as set forth in the following subsections, *Zhang-Moore* in view of *Rofheart* teaches a user selecting one or more helper servers to connect to for data transfer (e.g., streaming audio/video) by selecting said helper servers on a display screen. Regarding the claimed “while said media data stream is streamed to said mobile device ...,” *Zhang* teaches an embodiment where a mobile device moves and streams video to a succession of helper servers while maintaining display continuity amongst the various helper servers. *Zhang*, 10:58-65; *Dec.*, ¶¶128, 133. As discussed below, where a user is switching from one wireless speaker to another, the speaker would have been selected (per *Rofheart*’s teachings) while *Zhang-Moore*’s media data stream is being streamed from an external source to said mobile device. *Dec.*, ¶¶128-131. As also discussed below, even where the user is selecting a first wireless speaker to receive a new audio stream, a POSITA would have found it obvious to

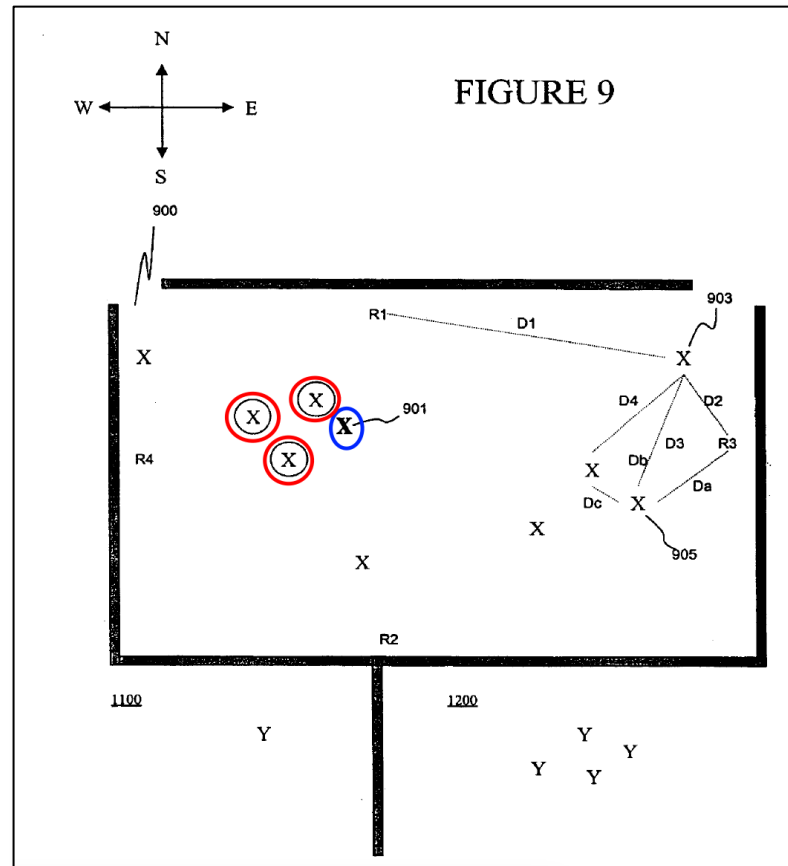
implement *Zhang-Moore-Rofheart* such that a user selects the wireless speaker after the mobile device begins to receive streaming audio from the web.

1. *Rofheart Teaches Selecting One of a Plurality of Devices Based on User Interaction with a Mobile Device*

Rofheart teaches that a user may select one or more of a plurality of devices. *Rofheart*, 18:54-58 (“[A] local device may display a positional map of all users in relation to the local device so that the user of the local device may select those remote devices that the user wants to communicate with[.]”), 5:37-45, 28:22-38 (teaching local device 901 “displays a graphical map of the position of each remote device in conference room 900 from which the user of the local device may choose remote devices to enable communications with.”). The local device’s “display 213 has touch screen capabilities that allow the user to select a remote device by contacting the display with a pointing device, for example.” *Rofheart*, 30:10-18. “If the user of the local device 901 selects a device on the display of the local device, then the local device 901 enables communications with that device as shown in step 1013.” *Rofheart*, 30:18-24, 27:46-28:38.

After a user selects one or more devices, local device’s display 213 is updated, “indicat[ing] which remote devices are enabled as positional information is updated.” *Rofheart*, 30:33-49 (noting enabled devices may be circled on the display). Fig. 9 below shows local device (annotated blue), remote devices with which

connections are established (annotated red), and other remote devices without established connections (indicated with “X,” but not highlighted):



Rofheart, Fig. 9 (annotated).

Rofheart teaches that the communications between the local device and remote devices include “transmitting and receiving communications such as text, video and voice on the unique links associated with the enabled remote devices as seen in step 1019.” *Rofheart*, 30:25-49. If a user wishes to change which devices with which to connect, the change can occur at any time by selecting or deselecting said remote device(s) on display 213. *Rofheart*, 30:49-52.

2. *Motivation to Combine Zhang and Rofheart*

The motivation to combine these references, as set forth above with reference to Claim 1(b), also applies here.

A POSITA would have understood that the proposed *Zhang-Moore-Rofheart* combination advantageously allows a user to selectively switch between wireless speakers while moving within a building, continuously and seamlessly playing Web-sourced streaming audio. *Dec.*, ¶¶132-37 (discussing *Zhang*'s teachings in which a user can switch between helper servers while moving through a building). A POSITA would have understood that in at least this mobility-focused embodiment, data streamed through *Zhang*'s modified mobile device would be actively streaming to the mobile device when the user selects a new wireless speaker. *Dec.*, ¶¶132-37. Motivations to make the proposed combination are not limited to this mobility scenario, however. As discussed in Sec. V.B.5, motivations to combine *Zhang* and *Moore* include providing users additional control over *when* to reroute streaming audio and *what* streaming audio to reroute to a helper server. In one example, only a portion of streaming audio (i.e., the low frequency bass) is rerouted to a wireless speaker, playing the retained audio via the mobile device's built-in speakers. A POSITA would have recognized that actively streaming audio to the mobile device when the user decides whether to reroute audio data would have provided additional control, improving the user experience. *Dec.*, ¶¶132-37. Indeed, a POSITA would

have appreciated that some users would prefer the option to begin playing audio on the mobile device speakers before deciding whether or not to reroute the audio to a larger wireless speaker. *Id.* (explaining that such an option makes sense when the mobile device speakers are sufficient for a given session and that this beneficial flexibility is only possible when *Zhang* is modified as proposed). Accordingly, whether a user is implementing *Zhang*'s mobility function, choosing a second wireless speaker to transition audio to, or choosing a first wireless speaker for a given audio stream, a POSITA would have been motivated to implement the combination such that audio is streaming to the mobile device when the user makes her selection. *Dec.*, ¶¶132-37.

The proposed modification would have had a reasonable expectation of success because *Zhang-Moore* already teaches receiving and rerouting streamed media content (e.g., video/audio) and *Zhang-Moore* as modified by *Rofheart* teaches selecting one or more helper servers for rerouting said streaming. *See* Claim 1(b); *Dec.*, ¶¶132-37. A POSITA would have understood that the process of selecting a helper server device to stream media to would have been similar whether the mobile device was already receiving the stream at that moment or not. *Dec.*, ¶¶132-37. Thus, a user would have made a selection to connect to one of a plurality of devices while a media data stream is streamed to the mobile device. *Dec.*, ¶¶132-37.

Additionally, a POSITA would have understood and found obvious to use a mobile device to select a helper device to connect to, as *Zhang* already teaches a mobile device with a display and user input capabilities. *Dec.*, ¶¶132-37. Indeed, selecting a helper server (based on distance information) would have been straightforward, requiring only straightforward changes to hardware, software or program instructions to accommodate *Rofheart's* teachings. *Rofheart*, 28:30-33, 28:39-42. *Dec.*, ¶¶132-37; *see* Claim 1(b). A POSITA would have understood that such selections would not have required a touchscreen display to implement. For example, *Zhang-Moore-Rofheart's* devices would have been selected via menu options or other user input in an embodiment where the mobile device lacks a touch screen. *Dec.*, ¶¶132-37. Alternatively, a POSITA would have been motivated to modify *Zhang-Moore-Rofheart's* device to utilize a touchscreen to capture *Rofheart's* advantages. *Dec.*, ¶¶132-37. In one embodiment, *Rofheart* teaches implementing selecting and deselecting remote devices using a touchscreen display. *Rofheart*, 30:10-24, 4:50-53, 30:49-52. A POSITA would have found it obvious and been motivated to modify *Zhang* to utilize a touchscreen per *Rofheart's* teachings. *Dec.*, ¶¶132-37. Indeed, a POSITA would have understood such a modification of using a touchscreen would have advantageously provided improved ease of use, quick selection time, and simplicity for selecting one of a plurality of devices with

which to connect rather than requiring a user to navigate potentially complicated menu options. *Dec.*, ¶¶132-37.

Such a modification would have had a reasonable expectation of success because *Zhang-Moore* and *Rofheart* teach similar mobile devices, and mobile devices with touchscreens were well known in the prior art, including *Rofheart's* mobile device. *Dec.*, ¶¶132-37. A POSITA would have understood that while modifying *Zhang* to utilize a touchscreen device may have incurred some additional cost, a POSITA would have been motivated to utilize a touchscreen device to capture *Rofheart's* advantageous selection/deselection teachings and to provide quick and simple selection/de-selection capabilities, such that increased cost would have been an acceptable tradeoff to achieve *Rofheart's* advantages. *Dec.*, ¶¶132-37.

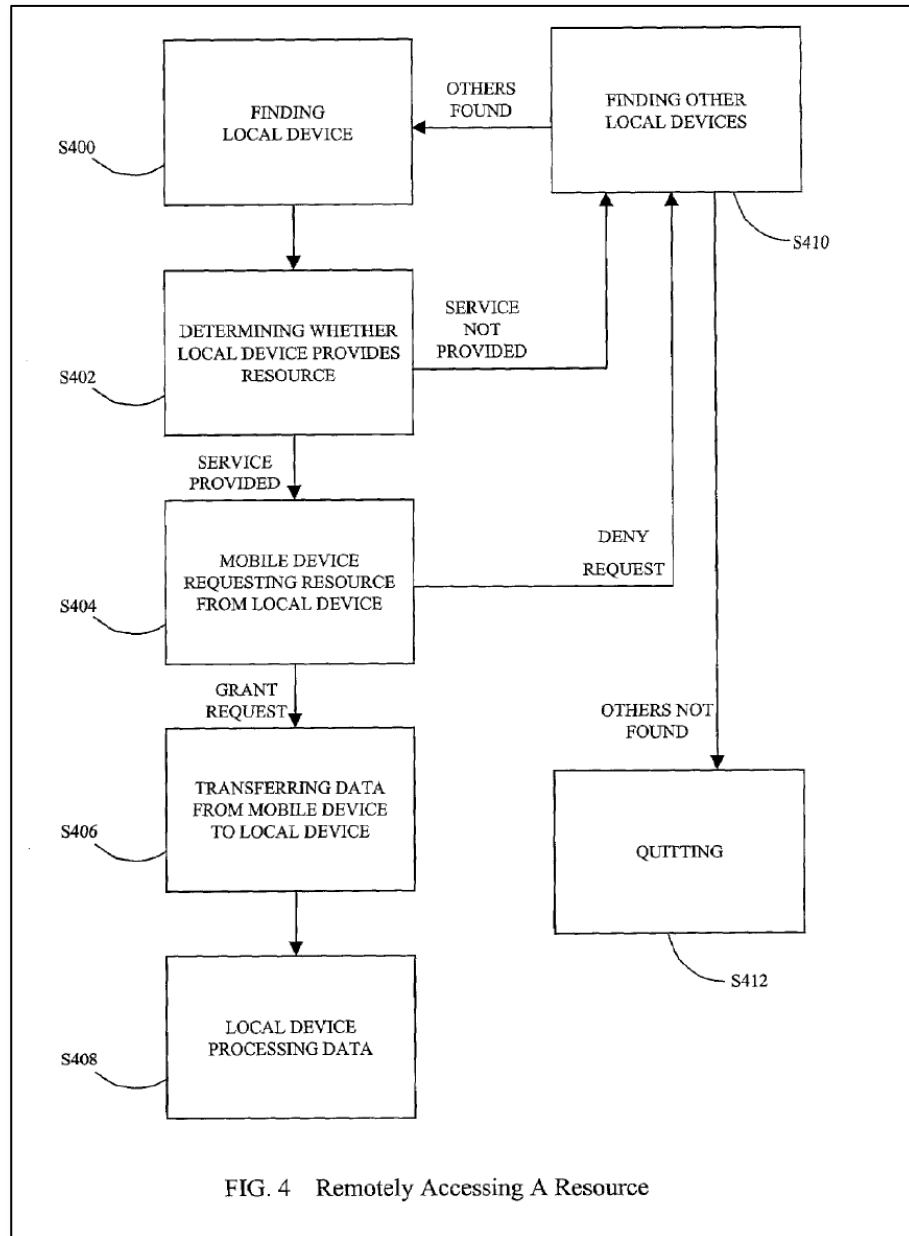
E. Claim 1(d) – setting up a wireless communication link with said selected compatible device via said local wireless communication network;

Zhang teaches that a mobile device transmits a service request to at least one helper server and said helper server responds by accepting the service request if compatible and available. *See* Claims 1(b)-(c).

Zhang teaches setting up a session (“*wireless communication link*”) between a “helper client” (mobile device) and helper server using TCP (or UDP). *Zhang*, 9:51-10:7; *Dec.*, ¶139. *Zhang* teaches that a session is created between a mobile device and helper server “from the time the client request is accepted by the server

and ends when the user finishes using the helper service.” *Zhang*, 9:54-60. In particular, *Zhang* teaches that a user may terminate the session with a helper server based on a “client request.” *Zhang*, 6:6-34. Further, *Zhang* teaches that “[d]uring the session, both data and control information are exchanged” via “the TCP connection between the client and the server.” *Zhang*, 9:54-60. A POSITA would have understood that such a connection via TCP/IP or UDP/IP (i.e., streaming protocol) would have utilized *Zhang*’s WLAN (i.e., local wireless communication network) for setting up the session (i.e., wireless communication link) between the mobile device and selected helper server (i.e., selected compatible device). *Dec.*, ¶¶139-140.

A POSITA would have understood that such a session between a mobile device and a helper server is a wireless communication link via said local wireless communication network (e.g., WLAN, *see* Claim 1(Pre)-1(a)). *Dec.*, ¶141. Specifically, accepting a service request prepares a helper server for receiving content and commands from a mobile device by initiating a session between said handheld device and said helper server. *Dec.*, ¶141. For example, *Zhang* teaches a “local device” (e.g., helper server) granting a service request results in “transferring data from mobile device to local device” at step S406. *Zhang*, 4:5-8, 4:32-34 (teaching the same but for the embodiment of Fig. 5).



Zhang, Fig. 4, see also Fig. 5.

Finally, a POSITA would have understood that, where UWB is optionally added to improve precision, *Zhang-Moore* would have utilized *Rofheart's* UWB to set up a TCP or UDP session (i.e., wireless communication link) with a selected compatible device via said local wireless communication network (e.g., WLAN).

See Claim 1(b)-1(c). Indeed, UWB is utilized for scanning the WLAN and identifying a plurality of devices and then selecting one or more devices with which to connect. *See* Claim 1(b)-1(c). A POSITA would have understood that such selection would have set up a TCP or UDP session using a wireless communication link using UWB for the WLAN. *See* Claim 1(b)-1(c); *Dec.*, ¶142.

F. Claim 1(e) - causing a routing of said media data stream of media content to said selected device via said wireless communication link for streaming said media data stream according to said streaming protocol for presentation of said media content by a media player of said selected device.

As discussed above, *Zhang-Moore* teaches rerouting all or part of an audio stream. *See* Claim 1(a). *Zhang-Moore* teaches wirelessly receiving a media data stream from an external source at a mobile device according to a streaming protocol. *See* Claim 1(a). *Zhang-Moore* in view of *Rofheart* teaches identifying a plurality of devices and selecting one or more devices to connect to. *See* Claims 1(b)-(c). Further discussed above, *Zhang* teaches setting up a session (i.e., wireless communication link) using TCP/IP or UDP/IP with said compatible selected device(s) to transmit data and commands. *See* Claim 1(a), 1(d). *Zhang-Moore* teaches said session is used to stream a media data stream according to a streaming protocol (e.g., TCP/IP, UDP/IP) for presentation by a media player of a selected device (e.g., helper server), as discussed below.

1. '223 Patent's Media Player

The '223 Patent does not use the phrase “media player” outside the claims, but it does describe *single-function* devices for playing media. '223 Patent, 5:29-41 (discussing a “video player”), 10:11-41 (describing MP3 players, VCR players, and DVD players). The '223 Patent also describes *multi-function* devices capable of playing media. *Id.*, 5:31-38 (noting that “video data . . . may be directed . . . to a convenient nearby video player or *multimedia enabled PC*”). Because Claim 1 recites a device “compatible to handle [] media” where the media is presented “by a *media player of said selected device*[,]” Claim 1 should not be limited to single-function devices for playing media and should also capture media player functionality in a *multi-function* device. Additionally, because there is no specific meaning ascribed to “media player” in the '223 Patent, Petitioner has interpreted the claim element to capture the hardware and/or software of a multi-function device that enables the device to process and present media to the user.

2. Zhang's Media Player

A POSITA would have understood that *Zhang's* audio-based helper servers (e.g. wireless speakers) include hardware and/or software capable of processing and playing audio to the user and are thus media players. *Dec.*, ¶145 (noting that the '223 Patent at 9:44-48 describes “routing an audio stream to nearby speakers” and does

not elaborate as to any specific hardware or software within the speaker that processes the audio stream).

Zhang teaches streaming audio/video to helper servers and that the helper servers display or present the media content. In one embodiment, PDA 30 “establishes a connection with the helper server 24 and transfers the content to the helper server 24 for display.” *Zhang*, 3:25-43 (including audio device 28), 3:55-60, 4:1-8, 4:32-38, 7:1-13, 8:13-19 (teaching a user remotely controlling the display of streaming data by issuing “stop,” “resume,” and “fast forward” commands to the helper server presenting the media content), 10:58-65 (teaching streaming video). A POSITA would have understood that devices capable of playing back media, as disclosed in *Zhang*, are media players. *Dec.*, ¶¶145-47.

Thus, a POSITA would have understood that during the modified *Zhang*’s TCP or UDP session, streaming data would have been routed from an external source to a mobile device and then rerouted from the mobile device to at least one selected helper server for presentation thereon via a media player. *Dec.*, ¶¶145-47. *See* Claims 1(a)-1(d).

3. Motivation to Combine *Zhang* and *Moore*

As discussed above with reference to Claim 1(a), a POSITA would have been motivated to modify *Zhang* pursuant to *Moore* such that streaming audio is received

by the mobile device and is rerouted (in whole or in part) to one or more helper servers. *Dec.*, ¶148. That discussion is incorporated herein by reference.

G. Claim 5⁶

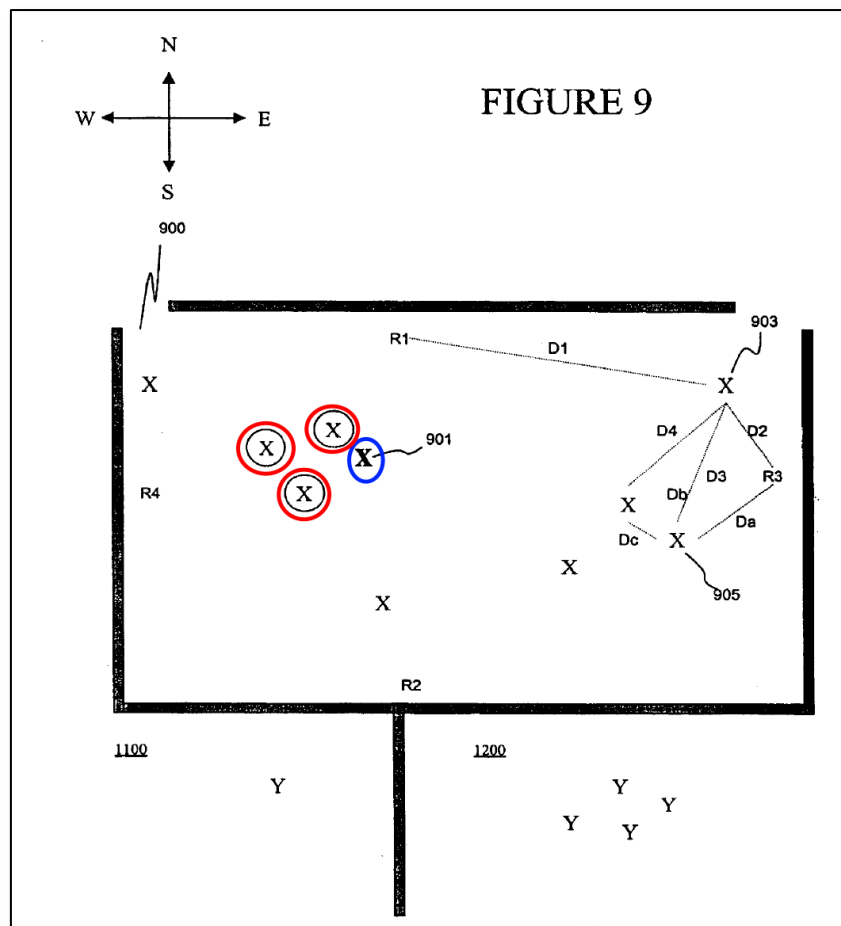
As set forth above with reference to Claims 1(b)-(c), the proposed combination, pursuant to *Rofheart's* teachings, permits a user to select one of multiple compatible devices via interacting with the mobile device. *Rofheart* teaches a graphical user interface (GUI) where a user makes a selection for which device(s) to connect to. Specifically, *Rofheart* teaches “the display 213 of the processor system 201 of local device 901 displays a graphical map of the position of each remote device in conference room 900 from which the user of the local device may choose remote devices to enable communications with.” *Rofheart*, 28:22-27. Further, *Rofheart* teaches that in “making a selection, the user of local device 901 looks at the display 213 and associates the devices on the display with a remote device visually verified by the local user.” *Rofheart*, 28:30-33.

A POSITA would have been motivated to modify *Zhang-Moore* per *Rofheart's* teachings of making a selection of one or more devices to connect to by using a GUI. *Dec.*, ¶¶149-51. Such a use of a known technique would have advantageously improved *Zhang-Moore's* similar system in the same way as

⁶ Full claim language can be found in the Claim Appendix below.

Rofheart's system. *Dec.*, ¶¶149-51. Indeed, such a modification would have allowed a user to make a selection by using a GUI as a menu. *Dec.*, ¶¶149-51.

Such a modification would have had a reasonable expectation of success because using a GUI as a menu for making selections was well known in the prior art. *Dec.*, ¶¶149-51. Further, such was discussed above for Claim 1(b)-1(c) and is incorporated herein.



Rofheart, Fig. 9 (annotated), *see also*, Fig. 10.

H. Claim 8

See Claim 1. As set forth above, *Zhang-Moore* as modified by *Rofheart* utilizes *Rofheart's* UWB to set up a TCP or UDP session (i.e., wireless communication link) with a selected compatible device via said local wireless communication network (e.g., WLAN), which is used to reroute all or part of an audio stream from the mobile device to a wireless helper speaker. See Claim 1(d-e).

Pursuant to *Moore's* teachings, a POSITA would have been motivated to transform the streaming audio in the mobile device (before rerouting to the wireless speaker) to accord with a media type requirement of the wireless speaker. *Dec.*, ¶¶152-53. *Moore* teaches that the mobile device can perform a media type transformation of the audio enhancement signal prior to sending that enhancement signal wirelessly to the speaker. *Moore*, 5:65-6:14 (noting optional “digital-to-analog converter 84” may be used to convert the enhancement signal “for transmission to the external audio system 14 via wireless interface 26”). A POSITA would have understood that other types of audio conversions were known at the time, including CODECs (coder/decoder) that transform audio coding. *Dec.*, ¶¶152-53. (explaining that audio codecs were commonly used to convert between coding types, including to match the available CODECs and to tradeoff between audio quality and bandwidth requirements where wireless transmission was involved). A POSITA would also have recognized the benefits of performing such transformations in the

mobile device prior to rerouting audio to a wireless speaker. As explained in the Claim 1 mapping, a primary benefit of modifying *Zhang* pursuant to *Moore* is expanding a user's choice of helper servers, allowing the user to deploy non-Internet enabled wireless speakers. Performing media type transformation in the mobile device would similarly benefit *Zhang*'s system, allowing the user to deploy wireless speakers with more limited audio processing capabilities, relying instead on the media type transformation capabilities of the mobile device. *Dec.*, ¶¶152-53. A POSITA would have expected success in making the combination, at least because *Moore* expressly teaches such functionality in its mobile device and because CODECs were well established and widely deployed. *Id.*

I. Claim 10

See Claim 1. Pursuant to *Rofheart*'s teachings, a POSITA would have found it obvious to encrypt the media stream before re-routing to a helper speaker. *Rofheart* teaches encryption between a mobile device and a selected remote device. *Rofheart*, 31:48-32:30 (teaching performing encryption using public key cryptography techniques). A POSITA would have understood that such encryption would have functioned not just with "messages" but also other data such as media data (e.g., audio, video). *Dec.*, ¶¶154-55.

A POSITA would have been motivated to modify *Zhang-Moore* in view of *Rofheart* to secure communications (e.g., media stream) between a mobile device

and one or more selected devices so that other non-selected devices cannot spy on or otherwise view or access said communications even if an unauthorized party were to intercept the media stream. *Dec.*, ¶¶154-55. Such a modification would have had a reasonable expectation of success because such security techniques were well known and understood including for streaming media. *Dec.*, ¶¶154-55.

J. Claim 11

See Claim 1. As set forth above, in response to receiving a service request from a mobile device, *Zhang's* helper servers announce their availability to service the request. *See* Claim 1(b). *Zhang* teaches that the mobile device's service "request may contain . . . the MIME type of the user data[.]" *Zhang*, 7:1-8. A POSITA would have been familiar with MIME type—also referred to as media type—as a data field that indicates the type of media to be routed/communicated. *Dec.*, ¶156. When *Zhang's* service request indicates a MIME type, a helper server responsively announcing its availability to service the request also announces—at least implicitly—availability for accepting a type of routed media, as claimed. *Dec.*, ¶156. Indeed, the '223 Patent never describes a wireless announcement that expressly indicates compatibility with a media type. From this, a POSITA would understand that Claim 11 captures implicit acknowledgement of media type compatibility. *Dec.*, ¶156.

K. Claim 14(Pre)

The mappings for Claim 14 below focus on apparatus elements that perform the same/similar functions discussed for Claim 1. *Zhang* alone or in view of *Moore* teaches a “mobile apparatus of routing media data stream[.]” Specifically, *Zhang* alone or in view of *Moore* teaches routing media data stream between a mobile device and a helper server. *See* Claim 1(a), 1(e).

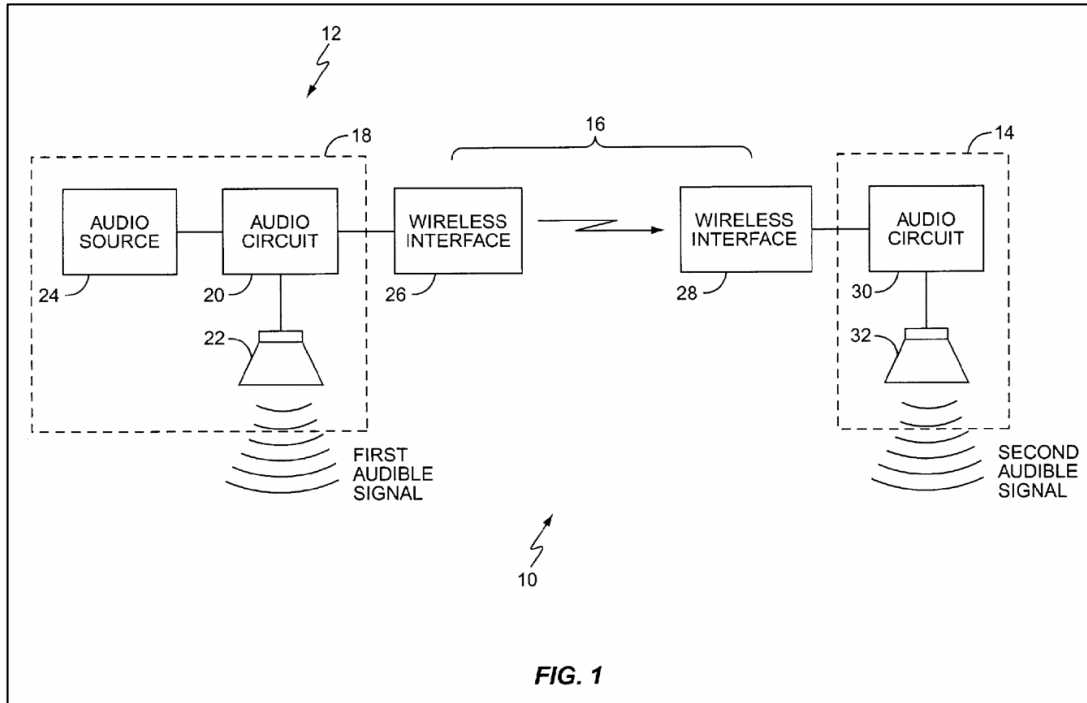
L. Claim 14(a)

1. *Zhang’s Teachings*

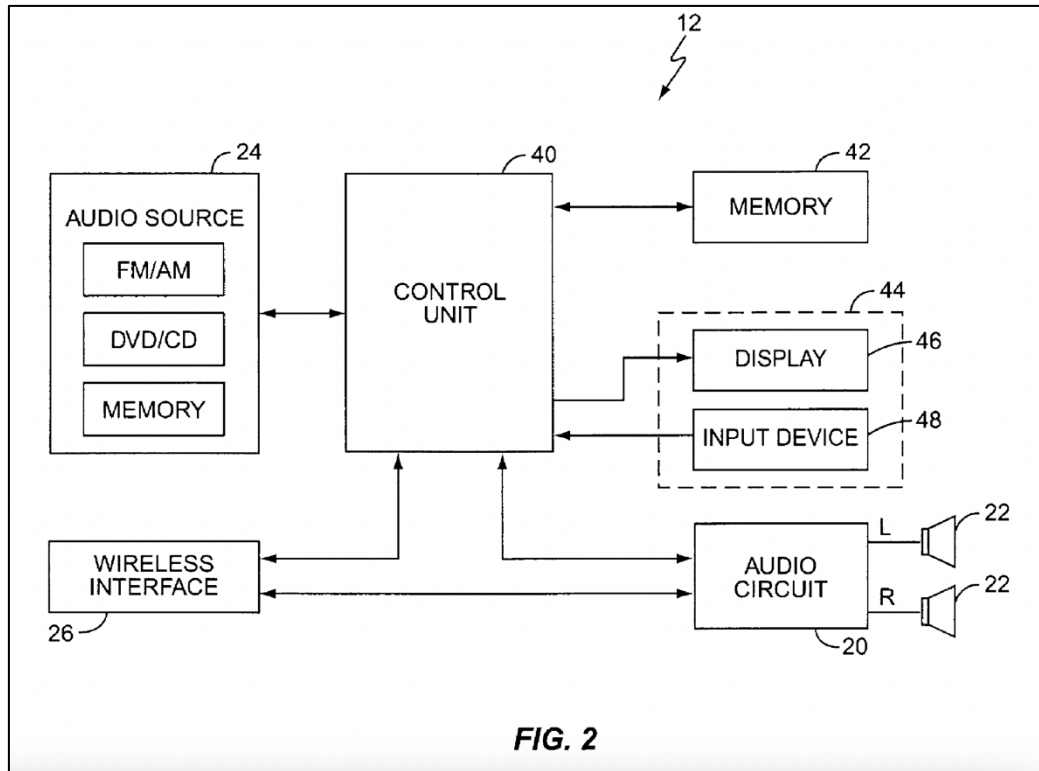
Zhang teaches a mobile apparatus such as a PDA or cell phone. *Zhang*, 3:25-31, 4:35-38. As set forth above with reference to Claim 1(a), a POSITA would have been motivated to modify *Zhang* according to *Moore’s* teachings (1) to route an audio stream from an external source (a Web server) via a local wireless communication network to a mobile device and then (2) to reroute some or all of that audio stream to a helper device (e.g., a speaker) via the same local wireless communication network. A POSITA would have understood that the mobile device in this combination would have included a receiver adapted to wirelessly receive a media data stream transmitted according to a streaming protocol. *Dec.*, ¶158. To the extent Patent Owner argues that *Zhang* does not sufficiently describe its mobile device’s receiver, *Moore* provides details of such a receiver, and a POSITA would have been motivated to incorporate *Moore’s* receiver in *Zhang’s* device. *See* Claim 1(a).

2. *Moore's Teachings*

Moore teaches portable device 12 includes a wireless interface (e.g., wireless transceiver). *Moore*, 4:1-20, 2:51-3:3, 3:35-53; *Dec.*, ¶159. Fig. 1 below depicts wireless interface 26 of portable audio device 12:



Moore, Fig. 1. Additionally, *Moore's* Fig. 2 below depicts components of portable audio device 12, including wireless interface 26:



Moore, Fig. 2. Further, *Moore* teaches receiving streaming audio from the Web. *Moore*, 8:4-8, 8:15-25, 8:54-67, 2:10-18; *see* Claim 1(a).

3. Motivation to Combine Zhang and Moore

A POSITA would have been motivated to modify *Zhang* in view of *Moore* and would have had a reasonable expectation of success for the same reasons discussed at Claim 1(a). *See* Claim 1(a).

Further, a POSITA would have been motivated to modify *Zhang* to include *Moore*'s wireless receiver hardware. *Dec.*, ¶¶160-61. Such a modification would have been combining prior art elements (e.g., microprocessor, wireless transceiver) according to known methods to yield the predictable result of a mobile device (e.g., cellular phone) that receives streaming audio from the Web, as taught by *Moore*.

Dec., ¶¶160-61. Such a use of a known technique of using such hardware components in mobile devices would have improved *Zhang*'s similar mobile device in the same way as *Moore*'s. *Dec.*, ¶¶160-61. Further, *Zhang* and *Moore* both teach similar mobile devices (e.g., cellular phones), such that modifying *Zhang* in view of *Moore*'s teachings would have been straightforward and would have had a reasonable expectation of success. *Dec.*, ¶¶160-61.

M. Claim 14(b)

1. *Zhang*'s Teachings

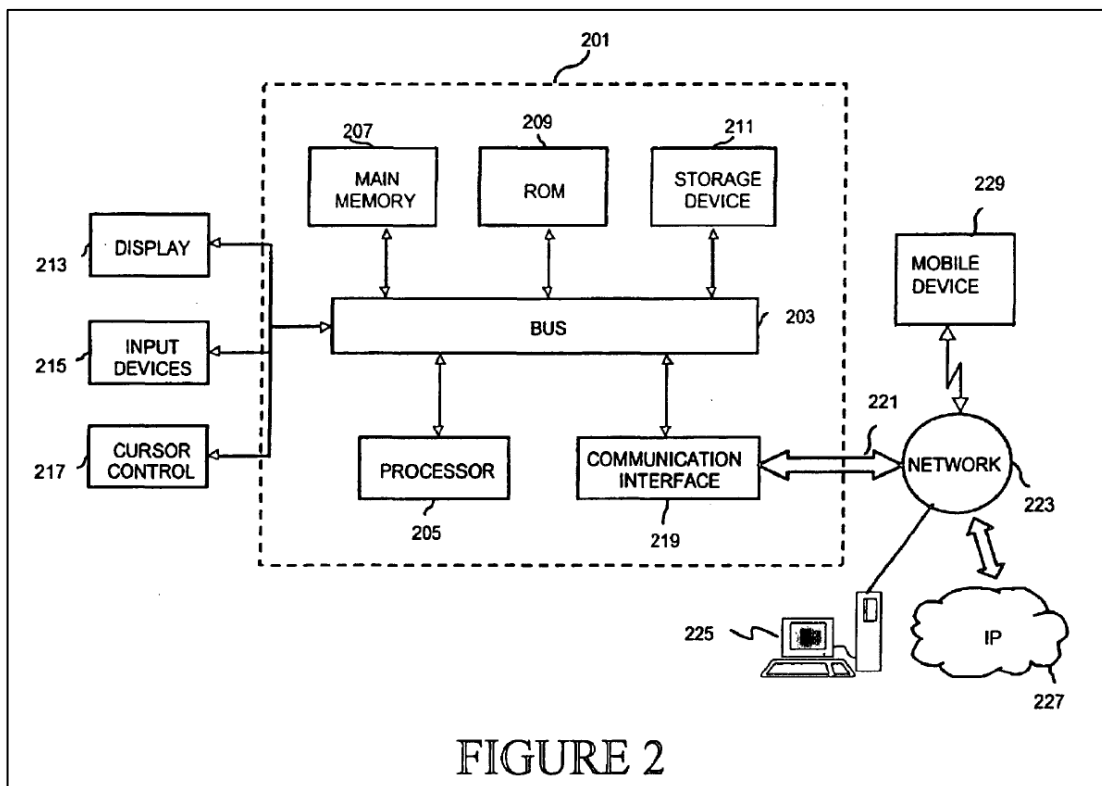
Zhang teaches performing device discovery to scan the wireless network to identify nearby helper servers. *See* Claim 1(b). A POSITA would have understood that a mobile device such as a PDA or cell phone would have included hardware including a scouting detector to perform such local wireless network scanning to identify a plurality of devices. *Dec.*, ¶162; *see* Claim 1(b).

2. *Rofheart*'s Teachings

To the extent it is argued *Zhang* does not expressly disclose hardware to perform such functionality, *Rofheart*, teaches such.

Rofheart teaches processor system 201 of a local device (e.g., PDA, mobile telephone, laptop computer) where processor system 201 “performs a portion or all of the processing steps of the invention in response to the processor 205 executing one or more sequences of one or more instructions contained in a memory, such as the main memory 207.” *Rofheart*, 14:14-15:22, 13:29-14:13. In particular, *Rofheart*

teaches “local devices” may be “a mobile device 229 such as a personal digital assistant (PDA) laptop computer, or cellular telephone.” *Rofheart*, 26:42-46, 15:50-53, Fig. 3, 2:10-12. Further, *Rofheart* teaches processor system 201 includes communication interface 219, which “provides a two-way UWB data communication coupling to a network link 221 that is connected to a communication network 223[.]” *Rofheart*, 15:23-64. Fig. 2 below depicts *Rofheart*’s processor system 201 of a local device including communication interface 219.



Rofheart, Fig. 2, 24:10-55, 28:22-57; Dec., ¶¶163-164.

3. *Motivation to Combine Zhang and Rofheart*

A POSITA would have been motivated to modify *Zhang* in view of *Rofheart* and would have had a reasonable expectation of success for the same reasons discussed above at Claim 1(b). *See* Claim 1(b).

A POSITA would have been motivated to modify *Zhang* (to the extent it was not expressly taught in *Zhang*) to include software (and optionally UWB hardware) such as taught by *Rofheart* to use a communication interface (“scouting detector”) adapted to scan the local communications network to identify a plurality of devices identified as compatible to handle media content. *Dec.*, ¶¶165-67. Such a modification would have been combining prior art elements (e.g., processor, communication interface, software instructions) according to known methods to yield the predictable result of a mobile device (e.g., PDA) that scans for a plurality of devices connected to a local wireless network as taught by *Rofheart*. *Dec.*, ¶¶165-67. Such a use of a known technique of using such hardware components in mobile devices would have improved *Zhang*’s similar mobile device in the same way as *Rofheart*’s. *Dec.*, ¶¶165-67.

Further, *Zhang* and *Rofheart* both teach similar mobile devices (e.g., PDAs), such that modifying *Zhang* in view of *Rofheart*’s teachings would have been straightforward and would have had a reasonable expectation of success. *Dec.*, ¶¶165-67.

N. Claim 14(c)

To the extent it is argued *Zhang* does not teach a controller adapted to select one of a plurality of devices and set up a wireless communication link, a POSITA would have been motivated to modify *Zhang* in view of *Rofheart*'s teachings and would have had a reasonable expectation of success when doing so. *See* Claims 1(c), 1(d), 14(b); *Dec.*, ¶¶168-70.

As discussed above, *Rofheart* teaches a user may select one or a plurality of devices to connect to. *See* Claim 1(b)-1(d), 14(b). Also discussed above, *Rofheart* teaches processor system 201 of a local device (e.g., PDA, mobile telephone, laptop computer) that performs processing steps. *See* Claim 14(b). *Dec.*, ¶¶168-70.

A POSITA would have been motivated to modify *Zhang* in view of *Rofheart* and would have had a reasonable expectation of success for the same reasons discussed above. *See* Claims 1(b), 1(c), 14(b).

O. Claim 14(d)

As discussed above, *Zhang-Moore* teaches routing a media data stream for presentation by a media player of a selected device. *See* Claim 1. To the extent it is argued that *Zhang* does not teach a controller adapted to instruct the routing of a media data stream, a POSITA would have been motivated to modify *Zhang* in view of *Rofheart*'s teachings to use a processor for such and would have had a reasonable expectation of success when doing so. *See* Claims 1(c), 1(d), 14(c); *Dec.*, ¶171.

As discussed above, *Rofheart* teaches a user may select one or a plurality of devices to connect to. *See* Claim 1(c). Also discussed above, *Rofheart* teaches a processor system 201 of a local device (e.g., PDA, mobile telephone, laptop computer) that performs processing steps. *See* Claim 14(b), 14(c). *Dec.*, ¶172.

A POSITA would have been motivated to modify *Zhang* to the extent not expressly taught in *Zhang* to include hardware and software such as a processor and programming instructions taught by *Rofheart* to route a media data stream of media content to a selected device via a wireless communication link for streaming the media data stream according to a streaming protocol for presentation of the media content by a media player of the selected device. *Dec.*, ¶¶173-74. Such a modification would have been combining prior art elements (e.g., processor, communication interface, software instructions) according to known methods to yield the predictable result of a mobile device (e.g., PDA) that includes a processor (“controller”) adapted to route a media data stream, as taught by *Rofheart*. *Dec.*, ¶¶173-74. Such a use of a known technique of using such hardware components in mobile devices would have improved *Zhang*’s similar mobile device in the same way as *Rofheart*’s. *Dec.*, ¶¶173-74.

Further, *Zhang* and *Rofheart* both teach similar mobile devices (e.g., PDAs), such that modifying *Zhang* in view of *Rofheart*’s teachings would have been

straightforward and would have had a reasonable expectation of success. *Dec.*, ¶¶173-74.

P. Claim 15

Zhang teaches a mobile device including a cellular phone and PDA. *See* Claims 1, 14.

Q. Claim 16

See Claims 5, 14(b). *Rofheart* teaches a user interface which allows a user to select between available media handling devices. *See* Claims 1, 14. Further, said user interface is associated with a scouting detector. *Id.* *Zhang-Moore* in view of *Rofheart* teaches selecting one or more of a plurality of such available compatible devices. *Dec.*, ¶176.

R. Claim 18

See Claim 14. *Zhang-Moore-Rofheart* use a WLAN connection between the mobile device and helper server (e.g., wireless speaker) for rerouting streaming audio. *See* Claim 1. A POSITA would have understood that the rerouting would have included control functionality (e.g., a processor and programming instructions) operable to carry out said rerouting through locally available network infrastructure (e.g., WLAN infrastructure including WLAN hardware and software for WLAN connections). *Dec.*, ¶177.

S. Claim 19

See Claim 14. As set forth above, the proposed *Zhang-Moore-Rofheart* combination routes an audio stream from an external source (Web server) via a local wireless communication network to a mobile device and then reroutes some or all of that audio stream to a helper server (e.g., speaker(s)). See Claim 1. A POSITA would have understood that Web-based streaming audio took many forms at the time, including basic streaming music as well as radio broadcasts, and would have been motivated to ensure the system supported multiple types of streaming audio. *Dec.*, ¶¶178-79 (discussing *Sirota* (Ex. 1029), which teaches a client device receives streaming radio broadcast over the Internet). Indeed, like basic streaming audio, radio broadcasts often include music and would benefit from *Moore's* process of splitting the bass components into a separate stream that played through a separate wireless speaker. *Dec.*, ¶¶178-79. A POSITA would have expected success in supporting Web-based radio broadcasts in the proposed combination. *Id.* (noting that *Sirota*, like *Zhang* and *Moore*, teaches streaming radio using TCP/IP, which a POSITA would have understood means there would have been no technical modifications required of the proposed modification to support streaming radio broadcasts in addition to basic streaming audio).

T. Claim 20

See Claim 14. As set forth above, in response to receiving a service request from a mobile device, *Zhang's* helper servers announce their availability to service the request. *See* Claim 1(b). *Zhang* teaches that the mobile device's service "request may contain . . . the MIME type of the user data[.]" *Zhang*, 7:1-8. A POSITA would have been familiar with MIME type—also referred to as media type—as a data field that indicates the type of media to be routed/communicated. *Dec.*, ¶¶180-81. When *Zhang's* service request indicates a MIME type, a helper server responsively announcing its availability to service the request also announces—at least implicitly—availability for accepting a type of routed media, as claimed. *Dec.*, ¶¶180-81. From this, the mapped scouting device is operable to determine media type requirements of each helper server, as claimed. *Dec.*, ¶¶180-81.

U. Claim 22(Pre)

The '223 Patent teaches that its described apparatus may be "realized as software[,]" but does not elaborate further. '223 *Patent*, 8:18-24. As set forth below, a POSITA would have understood that the functions performed by the proposed combination are also governed by software or at least that it would have been obvious to implement these functions in software ("computer program product"). *Dec.*, ¶182.

1. *Zhang's Teachings*

Zhang does not expressly teach program instructions for performing its functions. However, a POSITA would have understood that the combination's mobile device (e.g., PDA, cell phone) would have included programming instructions and a processor for performing its functions including routing media data streams. *See* Claims 1, 14. *Dec.*, ¶183.

2. *Rofheart's Teachings*

To the extent it is argued *Zhang-Moore* does not teach program instructions for its functions, a POSITA would have been motivated to modify *Zhang-Moore* to utilize program instructions executed by a processor, per *Rofheart*. *Dec.*, ¶¶184-86.

Rofheart teaches a processor system 201 of a local device (e.g., PDA, mobile telephone, laptop computer) where processor system 201 performs processing steps stored in memory. *See* Claim 14(b). Thus, to the extent programming instructions are not expressly taught in *Zhang-Moore*, a POSITA would have been motivated to modify *Zhang-Moore* to include programming instructions for its functions, such as taught by *Rofheart*. *Dec.*, ¶¶184-86.

Using programming instructions executed by a processor to control the operations of an electronic device, such as the mobile devices in *Zhang*, was using a known technique to solve a known problem in the prior art, and such was well within the skillset of a POSITA. *Dec.*, ¶¶184-86. Such a use of a known technique would

have improved *Zhang-Moore's* mobile device in the same way as *Rofheart's*. Further, such a modification would have had a reasonable expectation of success because using a processor to execute programming instructions was well known and well understood, and *Zhang, Moore, and Rofheart* teach similar portable devices, such that modifying *Zhang-Moore* per *Rofheart's* teachings would have been straightforward and not required undue experimentation. *Dec.*, ¶¶184-86.

V. Claim 22(a)

Zhang-Moore-Rofheart teaches a non-transitory computer readable storage medium having program instructions stored thereon. *See* Claim 22(Pre); *Dec.*, ¶187.

W. Claim 22(b)

A POSITA would have understood that “program instructions” would have been program instructions either alone or part of a larger set of instructions for performing particular functions when executed by a processor. *Dec.*, ¶188. Thus, a POSITA would have understood the claimed “first program instructions” through “fifth program instructions” (Claim 22(b)-22(f)) are met by program instructions in a single program or multiple programs stored in one or more non-transitory computer readable memories. *Dec.*, ¶188. The claimed functions and non-transitory computer readable storage medium are taught in the prior art, as mapped above. *See* Claims 1(a), 14, 22(Pre)-22(a); *Dec.*, ¶188.

X. Claim 22(c)

The claimed functions are taught in the prior art, as mapped above. *See* Claims 1(b), 14, 22(Pre)-22(b); *Dec.*, ¶189.

Y. Claim 22(d)

The claimed functions are taught in the prior art, as mapped above. *See* Claims 1(c), 14, 22(Pre)-22(b); *Dec.*, ¶190.

Z. Claim 22(e)

The claimed functions are taught in the prior art, as mapped above. *See* Claims 1(d), 14, 22(Pre)-22(b); *Dec.*, ¶191.

AA. Claim 22(f)

The claimed functions are taught in the prior art, as mapped above. *See* Claims 1(e), 14, 22(Pre)-22(b); *Dec.*, ¶192.

VI. GROUND 2: CLAIMS 7 AND 13 ARE OBVIOUS OVER *ZHANG, MOORE, ROFHEART, AND THORNTON*

A. Claim 7

See Claim 1. A POSITA would have been motivated to modify *Zhang-Moore-Rofheart* per *Thornton*'s teachings to share media content with a plurality of devices, for example, by transmitting the audio to a plurality of speakers. *Dec.*, ¶¶193-97. *Thornton* teaches a first device displaying a presentation received from a memory or other device, for example, while transmitting said presentation to another device for display on the second device. *Thornton*, 6:26-42 (teaching audio and video sources

for presentation on a first device include “data streams originating outside the system, such as pre-recorded television and live radio broadcast signals.”). *Thornton* teaches transmitting “[c]ontinuous media streams from” a first user to “the at least second device, wherein these media streams are presented on the at least second device without the at least second device receiving input from the second user.” *Thornton*, 3:56-4:11.

In one embodiment, *Thornton* teaches that a first device presents a selected multimedia presentation on its display while transmitting said presentation to a second selected device to present on its display simultaneously. *Thornton*, Abstract, 9:6-34, 9:37-47 (teaching multiple devices displaying the same presentation simultaneously), 11:14-29; *Dec.*, ¶194.

Indeed, *Thornton* teaches “synchronous communication between people by integrating audiovisual content into natural conversation through coordination of such content with the activity of the individuals, especially related to a shared application or task.” *Thornton*, 5:4-54, 11:30-38 (teaching “[p]eeking” and “[s]laving” where a user can synchronize a device with another device by seeing or hearing what another user is viewing or listening to or where a user can connect to another device and “present what that user’s terminal is presenting”).

A POSITA would have been motivated to modify *Zhang-Moore-Rofheart* per *Thornton*’s teachings, resulting in transmitting streaming audio (as multiple copies)

to multiple speakers. *Dec.*, ¶¶193-97. This proposed modification would advantageously allow a user to share audio content with one or more other users via one or more sessions so all the users experience the same content simultaneously via their own copy of said media. *Dec.*, ¶¶193-97 (discussing *Thornton's* advantages). The proposed modification would similarly allow a user to transmit audio to multiple speakers, creating a more immersive listening experience. *Id.* Such a modification would have been use of a known technique of copying media content and routing the content to a plurality of devices and that such would have improved *Zhang-Moore-Rofheart's* similar system in the same way as *Thornton*. *Dec.*, ¶¶193-97.

The proposed modification would have also had a reasonable expectation of success because *Zhang-Moore-Rofheart* already teaches receiving and presenting content at a first device and sharing content to at least a second device, and modifying *Zhang-Moore-Rofheart* such that the same content is copied and transmitted to a plurality of devices would have been a straightforward modification requiring only straightforward programming instruction or software changes. *Dec.*, ¶¶193-97; *see* Claim 1. Further, because such a technique was known, per *Thornton's* teachings, modifying *Zhang-Moore-Rofheart* would not have required undue experimentation. *Dec.*, ¶¶193-97.

B. Claim 13

See Claim 1. *Zhang-Moore* teaches receiving a media data stream from an external source, but does not expressly teach a media data stream is constantly received and presented while being delivered by an external source. See Claim 7 (mapping *Thornton's* synchronous and continuous media streams presented on multiple devices at the same time).

A POSITA would have understood that such a modification would have resulted in a media data stream being constantly received at a mobile device and presented by the mobile device while being delivered from an external source before the mobile device scans for available devices to which to stream said media. *Dec.*, ¶¶199-200. A POSITA would have been motivated to modify *Zhang-Moore-Rofheart* per *Thornton's* teachings to advantageously allow a user to share audio and/or video content with one or more other users via one or more sessions so all the users experience the same content simultaneously. *Dec.*, ¶¶199-200 (discussing *Thornton's* advantages). Indeed, such a modification would have been use of a known technique of a media data stream being constantly received and presented at a first device while being delivered from an external source (e.g., live radio broadcast) and then transmitting said media content to at least a second device for the second device to present simultaneously and would have improved *Zhang-Moore-Rofheart* in the same way as *Thornton*. *Dec.*, ¶¶199-200.

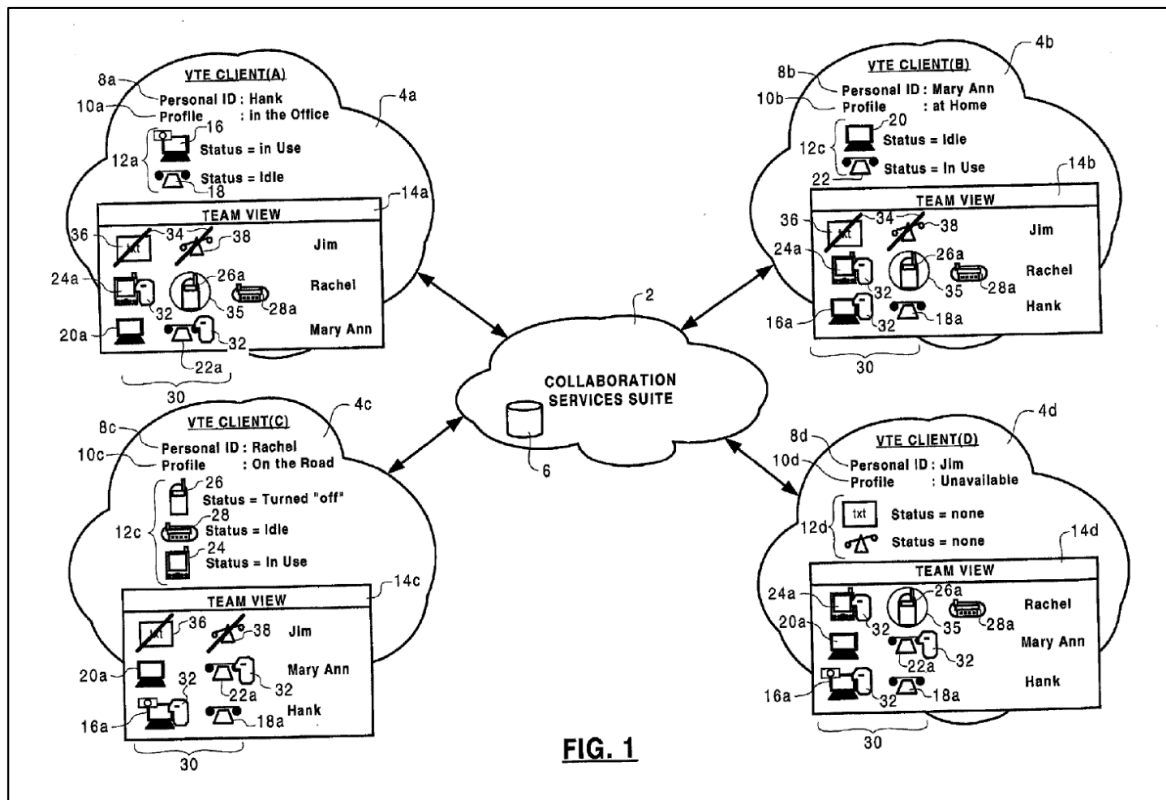
Such a modification would have had a reasonable expectation of success because *Zhang-Moore-Rofheart* already teaches receiving and presenting content at a first device and sharing content to at least a second device, and modifying *Zhang-Moore-Rofheart* such that the content is constantly received and presented while being delivered would have been a straightforward modification requiring only straightforward programming instruction or software changes. *Dec.*, ¶¶199-200; *see* Claim 1. Further, because such a technique was known, per *Thornton's* teachings, modifying *Zhang-Moore-Rofheart* would not have required undue experimentation. *Dec.*, ¶¶199-200.

VII. GROUND 3: CLAIM 9 IS OBVIOUS OVER *ZHANG, MOORE, ROFHEART*, AND *LIVERSIDGE*

A. Claim 9

Liversidge teaches a user profile that includes a plurality of devices associated with a particular user and which can be used for communicating with said user. *Liversidge*, [0017], [0020]. For example, such devices include a wireless PDA 24, wireless telephone 26, two-way pager 28, and personal computers (PCs) including notebook PCs. *Liversidge*, [0062]-[0065], [0070], [0076], [0078]-[0079], [0108]. Each user has a personal profile 10 and communications information 12 that indicates the availability of each user for participating in communications. *Liversidge*, [0062]. In one embodiment, user Hank has a “personal profile 10a indicating that he is currently working in his office.” *Id.* The personal profile 10a

provides “communications information 12a identifying his office personal computer (PC) 16 (which includes two-way video conferencing capability) and his office telephone 18 as communications devices through which he prefers to receive communications.” *Id.* Similarly, other users (e.g., Mary, Rachel, Jim) have respective personal profiles indicating a location and communications information indicating devices with which the user prefers to communicate at said location. *Id.* Fig. 1 below depicts said users, personal profiles, and communications information:



Liversidge, Fig. 1.

Liversidge further teaches users define one or more personal profiles 10, “each of which contains respective communications preferences information defining the

user's preferences relating to participation in communications with other team members." *Liversidge*, [0088]-[0090]. Such profiles relate to an environment or a context, such as "in the office[,]" "mobile[,]" and working at home[.]" *Id.* Further, *Liversidge* teaches profiles are "previously defined" and may be created, edited, and/or deleted to "define respective communications preferences of the user." *Liversidge*, [0090]-[0094]. Additionally, a user may select different profiles for different teams, where one team sees a particular availability while another team sees unavailability, for example. *Liversidge*, [0097]. A POSITA would have understood that such profiles would have been "predetermined" because they are predefined and stored. *Dec.*, ¶202. Further, a POSITA would have understood that selecting among said devices would have included selecting between devices found to be available because *Liversidge* teaches indicating availability and unavailability of devices for communications based on the current user profile. *Dec.*, ¶202.

A POSITA would have been motivated to modify *Zhang-Moore-Rofheart* in view of *Liversidge* to use *Liversidge's* known technique of using predetermined user profiles to indicate availability of one or more communications devices so that a user would select a device that is currently available for communications to improve *Zhang-Moore-Rofheart's* similar communications system in the same way as *Liversidge's* system. *Dec.*, ¶¶203-04. Indeed, such a modification to utilize predetermined user profiles would have advantageously signaled which devices

were available to connect to based on particular locations or particular users, for example, allowing a user easier and more specific selections for devices with which to communicate. *Dec.*, ¶¶203-04. Such a modification would have been especially advantageous to enhance organization for how available devices are presented to a user especially in environments where a large number of devices are available. *Dec.*, ¶¶203-04. Indeed, such a modification would have enhanced the efficiency of a user's selections and ease of use of the modified *Zhang-Moore-Rofheart* system.

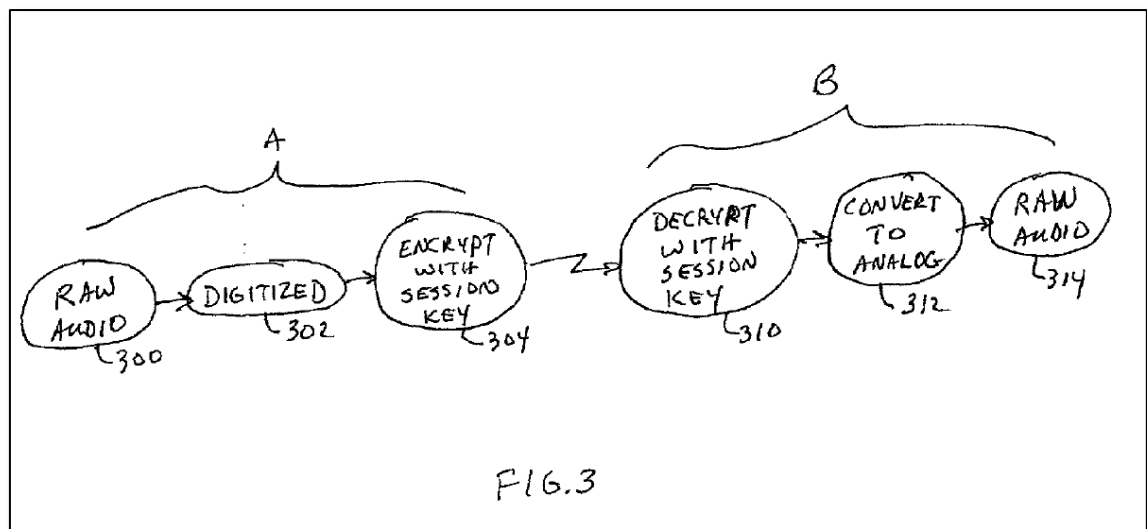
Such a modification would have had a reasonable expectation of success because grouping available devices based on predetermine profiles was known, per *Liversidge's* teachings, and because such a modification would have been straightforward, requiring only minor software or other programming instruction changes to implement. *Dec.*, ¶¶203-04.

VIII. GROUND 4: CLAIM 10 IS OBVIOUS OVER *ZHANG, MOORE, ROFHEART, AND ANGELO*

A. Claim 10

See Claim 1. *Angelo* teaches secured transmission of audio (e.g., voice), video, or a combination of audio and video communicated between portable devices utilizing encryption. *Angelo*, Abstract, [0004], [0009]-[0010], [0016]-[0021], [0029], [0031]. In particular, *Angelo* teaches encrypting real-time, two-way communications between portable devices such as PDAs. *Angelo*, [0009]-[0010], [0015] (including teaching direct and indirect connections between devices and that

real-time indicates not introducing delays that interfere with the usefulness of the audio stream, for example), [0016]-[0021]. *Angelo* teaches using “[a]ny suitable type of real-time encryption technique” such as using a “session key.” *Angelo*, [0022]-[0026]. *Angelo* teaches enhancing security by dynamically changing the session key during communications. *Angelo*, [0027]. Fig. 3 below depicts a real-time encryption process between two devices. *Angelo*, [0014], [0025].



Angelo, Fig. 3.

A POSITA would have been motivated to modify *Zhang-Moore-Rofheart* per *Angelo*'s teachings to capture *Angelo*'s advantages including the expressly taught advantage of providing a secure environment for communications between portable devices so that “information cannot be intercepted and accessed by an unauthorized entity, or at least not easily accessed by an unauthorized entity.” *Angelo*, [0007]-[0010]. Such a use of a known technique of encrypting communications between

portable devices would have advantageously improved *Zhang-Moore-Rofheart's* similar system in the same way as *Angelo's Dec.*, ¶¶206-07.

A POSITA would have had a reasonable expectation of success when making such a modification to implement encryption because *Angelo* teaches such a technique and because *Rofheart* teaches secure communications. Further modifying *Zhang-Moore-Rofheart* per *Angelo* would have predictably enhanced such security to cover audio, voice, video, or a combination of audio/video with encryption. *Dec.*, ¶¶206-07. Such a modification would have required only minor modifications, including changes to software or other programming instructions to utilize *Angelo's* security software 108 executed by a processor to provide encryption functionality. *Dec.*, ¶¶206-07 (including opening on *Angelo*, [0019], [0025]). Thus, such a modification would have been well within the skillset of a POSITA and would not have required undue experimentation to implement.

IX. THE BOARD'S DISCRETION UNDER 35 U.S.C. § 314(a)

The parallel litigation remains in a nascent stage, with an initial scheduling order having been submitted just weeks ago. Ex. 1030. Invalidity contentions have yet to be served, no claim constructions positions have been exchanged, and a pending motion to transfer may moot the recently submitted schedule entirely. Accordingly, at least the following *Fintiv* factors favor institution: The IPR filing following closely behind the schedule submission mean it's more likely a stay would

be granted (Factor 1), likely schedule modifications moving forward make it less likely that the final written decision in the IPR will precede the trial date (Factor 2), and the investment in the co-pending proceedings is low (Factor 3). The Petition also shows a strong unpatentability case (Factor 6). Finally, if review is instituted, Petitioner stipulates not to assert in the litigation (1) the Proposed Grounds of invalidity presented here nor (2) any grounds utilizing *Zhang* and *Moore* for the Challenged Claims, ensuring no overlap in invalidity issues between this IPR and the co-pending litigation (Factor 4). *See Microsoft Corp., v. WSOU Investments, LLC*, IPR2021-00930, Paper 18 at 11 (PTAB Dec. 2, 2021); *see also Google LLC v. Jawbone Innovations, LLC*, IPR2022-011224, Paper 11 at 15-16 (PTAB Jan. 3, 2023). Taken together, these *Fintiv* factors favor the Board declining discretionary denial.

X. CONCLUSION

For the forgoing reasons, Petitioner respectfully requests *inter partes* review of the Challenged Claims of the '223 Patent.

Respectfully submitted,

BY: /s/ Paul R. Hart
Paul R. Hart, Reg. No. 59,646

COUNSEL FOR PETITIONER

XI. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)

A. Real Party-In-Interest

Apple Inc. is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

B. Related Matters

The following matters relate to the '223 Patent:

- *S.M.R Innovations Ltd. v. Apple Inc.*, 6:23-cv-00479, D.I. 1 (W.D. Tex. Jul. 1, 2023); and
- *Apple Inc. v. S.M.R Innovations Ltd.*, Inter Partes Review No. IPR2024-01048
- *Apple Inc. v. S.M.R Innovations Ltd.*, Inter Partes Review No. IPR2024-01049
- *Apple Inc. v. S.M.R Innovations Ltd.*, Inter Partes Review No. IPR2024-01050

C. Lead and Back-Up Counsel

Petitioner provides the following designation and service information for lead and back-up counsel. 37 C.F.R. § 42.8(b)(3) and (b)(4).

Lead Counsel	Back-Up Counsel
Paul R. Hart (Reg. No. 59,646) paul.hart@eriseip.com PTAB@eriseip.com	Adam P. Seitz (Reg. No. 52,206) adam.seitz@eriseip.com PTAB@eriseip.com
<u>Postal and Hand-Delivery Address:</u> ERISE IP, P.A. 717 17 th Street, Suite 1400 Denver, Colorado 80202 Telephone: (913) 777-5600 Fax: (913) 777-5601	Kevin Rongish (Reg. No. 78,716) kevin.rongish@eriseip.com PTAB@eriseip.com
	<u>Postal and Hand-Delivery Address:</u> ERISE IP, P.A. 7015 College Blvd., Suite 700 Overland Park, Kansas 66211

	Telephone: (913) 777-5600 Fax: (913) 777-5601
--	--

CLAIM LISTING APPENDIX

U.S. Patent No. 9,699,223 for Claims 1, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, 20, 22

Claim Designation	Claim Language
Claim 1(Pre)	A method of routing media data stream, comprising:
Claim 1(a)	wirelessly receiving at a mobile device, from an external source via a local wireless communication network, a media data stream transmitted according to a streaming protocol and comprising media content selected from a group consisting of: audio content and video content;
Claim 1(b)	scanning said local wireless communication network using said mobile device to identify a plurality of devices, identified as compatible to handle said media content, said plurality of devices are wirelessly connected to said local wireless communication network and wirelessly announce an availability for accepting a routed media via said local wireless communication network;
Claim 1(c)	selecting, based on a user interaction made with said mobile device and while said media data stream is streamed to said mobile device from said external source according to said streaming protocol, one of said plurality of devices;
Claim 1(d)	setting up a wireless communication link with said selected compatible device via said local wireless communication network;
Claim 1(e)	causing a routing of said media data stream of media content to said selected device via said wireless communication link for streaming said media data stream according to said streaming protocol for presentation of said media content by a media player of said selected device.
Claim 5	The method of claim 1, wherein said selecting comprises displaying a menu at said mobile device to allow a user to perform said user interaction.
Claim 7	The method of claim 1, further comprising transmitting said media content to a plurality of copies so as to perform said routing to a number of said plurality of devices.

Claim Designation	Claim Language
Claim 8	The method of claim 1, wherein said setting up comprising transforming said media content into a form that accords with a media type requirement of said selected device.
Claim 9	The method of claim 1, wherein said selecting comprises carrying out a selection between devices found to be available, based on a predetermined user profile.
Claim 10	The method of claim 1, further comprising encrypting said media data stream of media content before routing to said selected device.
Claim 11	The method of claim 1, wherein said wirelessly announce is wirelessly announce an availability for accepting a routed media and an availability for accepting a type of said routed media.
Claim 13	The method of claim 1, wherein before said causing said media data stream is constantly received and presented by said mobile device while being delivered by said external source before said scanning is performed.
Claim 14(Pre)	A mobile apparatus of routing media data stream, comprising:
Claim 14(a)	a receiver wirelessly adapted to receive a media data stream transmitted according to a streaming protocol and comprising media content from an external source via a local wireless communication network, said media content is selected from a group consisting of; audio content and video content;
Claim 14(b)	a scouting detector adapted to scan said local wireless communication network to identify a plurality of devices, identified as compatible to handle said media content, said plurality of devices are wirelessly connected to said local wireless communication network and wirelessly announce an availability for accepting a routed media via said local wireless communication network;
Claim 14(c)	a controller adapted to select, based on a user interaction made with said mobile apparatus, one of said plurality of devices and to instruct a setting up of a wireless communication link with said selected device via said local wireless communication network;
Claim 14(d)	wherein said controller is adapted to instruct the routing of said media data stream of media content to said selected device via said wireless communication link for streaming said media data

Claim Designation	Claim Language
	stream according to said streaming protocol for presentation of said media content by a media player of said selected device.
Claim 15	The mobile apparatus of claim 14, wherein said mobile apparatus is one of a cell phone, a handheld device, and a personal digital assistant (PDA).
Claim 16	The mobile apparatus of claim 14, further comprising a user interface associated with said scouting detector for allowing a user to select between available compatible media handling devices to reroute said media data stream thereto.
Claim 18	The mobile apparatus of claim 14, wherein said controller further comprising control functionality operable to carry out said rerouting through locally available infrastructure.
Claim 19	The mobile apparatus of claim 14, wherein said media content is one of voice data, bidirectional voice data, bidirectional audio data, bidirectional video data, a game session, an interactive game session, a television broadcast, and a radio broadcast.
Claim 20	The mobile apparatus of claim 14, wherein said scouting detector is operable to determine media type requirements of each of said plurality of devices.
Claim 22(Pre)	A computer program product for routing media data stream, said computer program product comprising:
Claim 22(a)	a non-transitory computer readable storage medium having stored thereon:
Claim 22(b)	first program instructions executable by a processor to wirelessly receive at a mobile device, from an external source via a local wireless communication network, a media data stream transmitted according to a streaming protocol and comprising media content selected from a group consisted of: audio content and video content;
Claim 22(c)	second program instructions executable by the processor to scan said local wireless communication network using said mobile device to identify a plurality of devices, identified as compatible to handle said media content, said plurality of devices are wirelessly connected to said local wireless communication network and wirelessly announce an availability for accepting a routed media via said local wireless communication network;

Claim Designation	Claim Language
Claim 22(d)	third program instructions executable by the processor to select, based on a user interaction made with said mobile device and while said media data stream is streamed to said mobile device from said external source according to said streaming protocol, one of said plurality of devices;
Claim 22(e)	fourth program instructions executable by the processor to set up a wireless communication link with said selected device via said local wireless communication network; and
Claim 22(f)	fifth program instructions executable by the processor to cause a routing of said media data stream of media content to said selected device via said wireless communication link streaming said data stream of media content according to said streaming protocol for presentation of said media content by a media player of said selected device.

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 9,699,223 (“’223 <i>Patent</i> ”)
Exhibit 1002	Prosecution History for the ’223 Patent (“’223 <i>File History</i> ”)
Exhibit 1003	Declaration of Dr. Sayfe Kiaei (“ <i>Dec.</i> ”)
Exhibit 1004	U.S. Patent No. 7,536,182 to Zhang (“ <i>Zhang</i> ”)
Exhibit 1005	U.S. Patent No. 7,295,809 to Moore (“ <i>Moore</i> ”)
Exhibit 1006	U.S. Patent No. 7,058,414 to Rofheart et al. (“ <i>Rofheart</i> ”)
Exhibit 1007	U.S. Patent No. 7,574,474 to Thornton et al. (“ <i>Thornton</i> ”)
Exhibit 1008	U.S. Patent App. Pub. No. 2002/0076025 to Liversidge et al. (“ <i>Liversidge</i> ”)
Exhibit 1009	U.S. Patent App. Pub. No. 2003/0061493 to Angelo et al. (“ <i>Angelo</i> ”)
Exhibit 1010	U.S. Patent App. Pub. No. 2002/0178279 to Janik et al. (“ <i>Janik</i> ”)
Exhibit 1011	International Publication No. WO 01/74024 to Hartmaier et al. (“ <i>Hartmaier</i> ”)
Exhibit 1012	European Patent Application No. EP1132847 to Han et al. (“ <i>Han</i> ”)
Exhibit 1013	U.S. Patent App. Pub. 2002/0102998 to Lin (“ <i>Lin</i> ”)
Exhibit 1014	U.S. Patent No. 7,580,005 to Palin (“ <i>Palin</i> ”)
Exhibit 1015	U.S. Patent App. Pub. No. 2003/0110234 to Egli et al. (“ <i>Egli</i> ”)
Exhibit 1016	U.S. Patent No. 6,910,068 to Zintel et al. (“ <i>Zintel</i> ”)
Exhibit 1017	Bluetooth Core Specification version 1.1 (“ <i>Bluetooth V1.1 Core Spec.</i> ”)
Exhibit 1018	U.S. Patent No. 6,901,273 to Lutnaes (“ <i>Lutnaes</i> ”)
Exhibit 1019	U.S. Patent App. Pub. No. 2002/0141548 to Boda (“ <i>Boda</i> ”)
Exhibit 1020	International Publication No. WO 02/19152 to Bergman et al. (“ <i>Bergman</i> ”)
Exhibit 1021	Matthew S. Gast. <i>802.11 Wireless Networks The Definitive Guide</i> . O’Reilly & Associates. April 2002. (“ <i>Gast</i> ”)
Exhibit 1022	U.S. Patent No. 6,925,108 to Miller et al. (“ <i>Miller</i> ”)
Exhibit 1023	Jim Geier. <i>Wireless LANs</i> . 2 nd Edition. Sams Publishing. July 2001. (“ <i>Geier</i> ”)
Exhibit 1024	U.S. Patent No. 6,212,282 to Mershon (“ <i>Mershon</i> ”)
Exhibit 1025	U.S. Patent No. 6,526,287 to Lee (“ <i>Lee</i> ”)
Exhibit 1026	U.S. Patent App. Pub. No. 2002/0101367 to Geiger et al. (“ <i>Geiger</i> ”)
Exhibit 1027	U.S. Patent App. Pub. No. 2002/0186770 to Jawerth et al. (“ <i>Jawerth</i> ”)

Exhibit 1028	U.S. Patent App. Pub. No. 2003/0013438 to Darby (“ <i>Darby</i> ”)
Exhibit 1029	U.S. Patent App. Pub. No. 2003/0139966 to Sirota et al. (“ <i>Sirota</i> ”)
Exhibit 1030	<i>S.M.R Innovations Ltd. v. Apple Inc.</i> , 6:23-cv-00479, D.I. 50 (“[Proposed] Agreed Scheduling Order”) (W.D.Tex. Jun. 7, 2024)
Exhibit 1031	Affidavit of Nathaniel E. Frank-White concerning <i>BluetoothSpec</i>

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. §42.24 that the foregoing Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 13,980 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: July 5, 2024

BY: /s/ Paul R. Hart
Paul R. Hart, Reg. No. 59,646

COUNSEL FOR PETITIONER

**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on July 5, 2024, a complete and entire copy of this Petition for *Inter Partes* Review including exhibits was provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '223 Patent as listed on PAIR:

PRTSI Inc.
232 NW 42nd Ter
Plantation, Florida 33317

Further, a courtesy copy of this Petition for *Inter Partes* Review was sent via Email to Patent Owner's litigation counsel:

Cortney S. Alexander
cortneyalexander@kentrisley.com
KENT & RISLEY LLC
5755 N Point Pkwy Ste 57
Alpharetta, GA 30022

BY: /s/ Paul R. Hart
Paul R. Hart, Reg. No. 59,646

COUNSEL FOR PETITIONER