IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

S.M.R INNOVATIONS LTD and Y.M.R TECH LTD, Plaintiffs, v. APPLE INC., Defendant.	Civil Action No. 6:23-cv-479-ADA JURY TRIAL DEMANDED

SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs S.M.R Innovations LTD and Y.M.R Tech LTD (collectively, "Plaintiffs") state for their Second Amended Complaint against Apple Inc. as follows:

INTRODUCTION

1. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code.

PARTIES

2. Plaintiff S.M.R Innovations LTD is a limited liability company organized and existing under the laws of Israel. Oded Shmueli, an inventor on the patents asserted herein, wholly owns S.M.R Innovations LTD.

3. Plaintiff Y.M.R Tech LTD is a limited liability company organized and existing under the laws of Israel. Benny Yehezkel, an inventor on the patents asserted herein, wholly owns Y.M.R Tech LTD.

4. On information and belief, Apple Inc. is a company organized under the laws of the State of California. Upon information and belief, Apple sells, offers to sell, and/or uses products and services throughout the United States, including in this judicial district, and introduces infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district and elsewhere in the United States.

JURISDICTION

5. This Court has subject matter jurisdiction over all causes of action set forth herein pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, Title 35, United States Code, including 35 U.S.C. § 271, *et seq*.

6. This Court has personal jurisdiction over Defendant, consistent with due process and the provisions of the Texas Long Arm Statute, such that it would be reasonable for this Court to exercise jurisdiction without offending traditional notions of fair play and substantial justice. Defendant is registered to do business in this State. Further, Defendant has minimum contacts with this State, and it has purposefully availed itself of the privileges of conducting business in this State. On information and belief, Defendant has committed acts of patent infringement as complained of herein in this State and this judicial district.

7. Venue is proper in this Court pursuant to 28 U.S.C. § 1400(b) on the grounds that Defendant has regular and established places of business in this judicial district and has committed acts of infringement in this judicial district.

The Inventors of the Patents-in-Suit and Their Inventions

8. Oded Shmueli, one of the named inventors on the patents-in-suit, is an Emeritus Professor of Computer Science at the Technion University in Haifa, Israel. He graduated from

Brandeis University and received his Ph.D. in Applied Mathematics from Harvard University in 1981.

9. Professor Shmueli has held positions at several leading industrial research laboratories, including IBM Research, AT&T Bell Labs, and MCC. He was also a consultant for HP Laboratories over a five-year period.

10. He was a co-founder of several start-up companies in various domains. He has been named as an inventor on more than 55 issued U.S. patents. From 2006-2008, he served as the Dean of the Computer Science Faculty at the Technion University and from 2008-2014 as the Executive Vice President for Research and the Managing Director of the Technion Research and Development Foundation Ltd. His research interests include theoretical and practical aspects of database systems, topics on which he has published widely. He is currently Chief Scientist and co-founder of a start-up company in the artificial intelligence domain.

11. Benny Yehezkel, another inventor of the patents-in-suit, is an experienced executive in the technology industry.

12. Mr. Yehezkel holds a degree in Computer Science from the Technion University and an MBA from the Tel Aviv University.

13. During the last twenty years, Mr. Yehezkel has served as CRO of SQream technologies, a start-up company in the Big-Data analytics domain; CEO of RadCloud, a start-up company in the public cloud domain; co-founder and CEO of MyPensya Ltd., a start-up company in the fintech domain; Executive Vice President of Quantum Telecom; CEO of Dealigence, a start-up company in the electronic commerce domain; and Executive Vice President of ECtel and CEO of Elron Telesoft (which was acquired by ECtel). Both ECtel and

Elron Telesoft engaged in developing and marketing revenue-assurance and fraud-detection systems. He is currently the CEO of a start-up company in the customer engagement and CX domain.

14. As set forth in the Declaration of Oded Shmueli, attached hereto as Exhibit O and incorporated herein by reference, "The genesis of the inventions underlying the Asserted Patents traces back to an initial conversation between myself [i.e., Oded Shmueli] and Benny that was born out of the widespread use of cellular phones juxtaposed with their limited capabilities. In October 2000, while we were on a joint trip to India, this realization served as the impetus for groundbreaking ideas at the intersection of appliance usability and communication technology."

15. As set forth in the Declaration of Oded Shmueli, "As of the priority date of the Asserted Patents, more than twenty years ago, the state of affairs regarding handheld devices was notably primitive. Mobile communication devices were emerging, but the idea of streaming media was still years away. At that time, cellular phones could not accept streaming data or perform routing or rerouting of a received stream to another electronic device. PDAs and cellphones were perceived merely as terminal devices, not conduits for receiving or forwarding streaming movies, music, and games. Ad-hoc, local engagement with other electronic devices in an uncharted environment was not even on the horizon. By 'uncharted environment,' I am referring to an environment that does not conform to a fixed map of devices, but instead exists in a potentially continuously changing state—devices come and go, are available and then not, new device types come in, and so on." Exhibit O at ¶ 5.

16. This limited state of the art is discussed in the specification of the Asserted Patents. For example, the specification states:

> Mobile communication devices today typically have data processing ability which allows them to handle multi-media, and different types of devices are today able to communicate with each other, either directly via a permanent or temporary link or indirectly via a network. Thus data, including multimedia, can be directed or routed from one device to another device. The idea of multi-media routing stems from the myriad of opportunities which present themselves in routing signals from one device or kind of device to another. However, in general, the playing of multimedia data is limited, at least in the short term, to the device on which it is received, or to those in which the data originates. This limitation can be a considerable limitation on the user's ability to enjoy the multimedia since different devices have very different capabilities regarding the playing of multimedia.
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> . . .
>
> Most current mobile devices in particular provide relatively poor multi-media capabilities including digital audio, image, and/or video capabilities (as well as other media capabilities) in comparison with other existing devices such as land/fixed line phones, computer monitors, TV screens and Hi-Fi sets. Compared to high quality media playing equipment, even 3rd generation mobile devices (3G) are of inferior quality.

'223 patent at 1:33-48, 1:60-67; *see also* Exhibit O at ¶ 6.

17. The specification of the Asserted Patents also identifies deficiencies in the state of the art, including discussion of specific references:

> A number of patent applications discuss rerouting of communications from one communication unit to another. An example is GB 2,370,451, which discloses a communication unit that detects the presence in its vicinity of a second communication unit and determines its identity. If the identity is found to be of a predetermined set (e.g. of communication units having the same owner) calls made to the second communication unit are diverted to the first unit. The arrangement is useful where a user has multiple communication units, for example a car telephone and a cellular handset, with differing telephone numbers as the user may be contacted using any of these.
>
> WO0141317A3: call diversion system, discloses a system specifically for redirecting calls between satellite and terrestrial cellular systems. The disclosure addresses the issue of reformatting data messages for the transition.
>
> Neither of the above systems takes into consideration the types of multimedia content of the incoming calls data or playing quality and usage comfort when

> deciding whether to redirect, and redirection is based on devices having a shared ownership or otherwise being part of a predetermined set. In the above-described systems the user typically has only limited control over rerouting. Nevertheless, it would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.

'223 patent at 2:1-28; *see also* Exhibit O at ¶ 7.

18. As set forth in the Declaration of Oded Shmueli, "As stated in the specification, Benny and I recognized that '[I]t would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.'" Exhibit O at ¶ 8.

19. As set forth in the Declaration of Oded Shmueli, "As the specification explains, the disclosed invention improves upon the state of the art. For example, the specification states that 'the ability to route content from non-mobile, that is land or fixed devices to nearby mobile and other devices permits a range of possibilities for use which is currently not provided for.'" '223 patent at 4:36-40; Exhibit O at ¶ 9.

20. As set forth in the Declaration of Oded Shmueli, "As another example of the disclosed technological improvements, the specification states that '[a]nother (optional) function of the announcer 30 is that of informing the environment, typically a user, that media content has been routed to it and is now usable (for example, to announce that a rerouted call is now available on this telephone). The latter kind of announcement, that is to say to persons rather than to electronic equipment, may typically comprise light flashes, rings, a loudspeaker sound or even a smell.' '223 patent at 7:39-46; *see also id.* at 11:66-67 ('The nearby phone rings, or flashes to

indicate the rerouted call.'); 5:53-61 (disclosing the ability to accept a call on one device even though it was directed to another device)." Exhibit O at ¶ 10.

21. As set forth in the Declaration of Oded Shmueli, "Using the solution disclosed in the specification, for example, someone can route a call directed to his or her smartphone to a nearby computer or watch that is wirelessly linked with the smartphone. Using the solution disclosed in the specification, one can also be prompted by, for example, a watch that there is an incoming call via an associated smartphone. Prior to the invention, one would either miss the call or run to the smartphone to accept it, usually arriving just as the call disconnected. This routing solution utilized by modern devices is disclosed in the specification." Exhibit O at ¶ 11.

22. As set forth in the Declaration of Oded Shmueli, "The specification expressly describes various benefits associated with routing phone calls: 'For example, the ability to route an incoming phone call, typically comprising voice, from a mobile device to a land/fixed line phone may generally be expected to upgrade the quality of the call. The ability to route hand held calendar content from a mobile device having some digital ability to a computer monitor, may allow for better viewing of the information. Such rerouting may also enhance the user's ability to share the information with other people or with computer applications, for example applications that capture information displayed on the monitor and use it to trigger other events. Such applications can easily be run on a PC or laptop computer but are difficult to run on a mobile telephone for example.' '648 patent at 4:47-59. It also describes various benefits associated with user notifications, such as, for example, that the ability to 'inform a user about an availability of media content at the mobile device" may allow prompt action and response.' '648 patent at 13:43-45." Exhibit O at ¶ 12.

23. As set forth in the Declaration of Oded Shmueli, "The Asserted Patents address the revolutionary concept of routing and rerouting streaming data, encompassing video, audio, and games, between electronic devices. This was not merely about rerouting phone calls in a well-defined network; it was about ushering in a new era of multimedia communication. At the time, the public's radar did not include streaming movies to smartphones, TV sets, streaming set-top boxes, music to one or more wireless speakers, or notifying electronic wearable watches of available data, even though such things are now so ubiquitous that we take them for granted and wrongly consider them to have always been there." Exhibit O at ¶ 13.

24. As set forth in the Declaration of Oded Shmueli, "The inventions claimed in the Asserted Patents introduced groundbreaking ideas. Firstly, the routing of received streaming data could occur at the local area network level or by having the final target device obtain data independently from a remote source. These were revolutionary concepts in an era where such considerations did not exist. The technology envisioned devices produced by different manufacturers, and even of different types and built for different purposes (i.e., cellular phones, TV, wearables, etc.), seamlessly interacting and communicating, ensuring an ecosystem where newly introduced devices could easily join." Exhibit O at ¶ 14.

25. As further set forth in the Declaration of Oded Shmueli, "Moreover, the inventions claimed in the Asserted Patents transcended the then-established paradigm. The system could function in a loosely structured, dynamic, and essentially self-managing environment. There was no central management authority, and multiple streaming rerouting operations could be initiated concurrently by all sorts of users: workers, visitors, kids, clients, etc. Devices equipped with this technology could seamlessly connect, join, and leave at will,

introducing an unprecedented level of adaptability and flexibility." Exhibit O at ¶ 15.

26. As set forth in the Declaration of Oded Shmueli, "Today, operating via a smartphone, one can instruct other available devices (such as a TV) to play a desired movie. If no such TV is available, one may continue watching on a personal device such as a smartphone. The content can be obtained from the smartphone via the LAN or received via WAN. This solution is disclosed in the specification of the Asserted Patents, '223 patent at 10:10-41. Prior to the invention, one could not route a movie being viewed on a smartphone or similar device to a TV or other such device. Actually, prior to the invention, once could not even view a streaming movie on a smartphone." Exhibit O at ¶ 16.

27. As set forth in the Declaration of Oded Shmueli, "These technological innovations provide various benefits, including a larger range of operating capabilities with increased efficiency, and this is referenced in the specification: 'The capability of routing of multi-media content (possibly including media transformation and multiplication, i.e. cloning) from one device to another may dramatically upgrade media playing quality, and grant the user the liberty to play the content on any device he wishes, preferably the most suitable device available, regardless of the origin of the content or the device to which the content may initially have been directed, or at which the content originates. Furthermore, by rerouting to a more capable device, a user's satisfaction level may be increased in comparison to having to remain with a device that say is limited by inferior data rate, processing power, memory capacity or input/output facilities. … [and] permits a range of possibilities for use which is currently not provided for.' '223 patent at 4:21-41. The invention's technology further supported various transformations that enhanced accessibility for people with disabilities, such as the hearing

impaired by transforming voice to text." Exhibit O at ¶ 17.

Plaintiffs' U.S. Patent No. 9,699,223

28. On July 25, 2002, Oded Shmueli and Benny Yehezkel filed U.S. Provisional Patent Application No. 60/398,077 ("the '077 provisional application").

29. On January 21, 2003, Mr. Shmueli and Mr. Yehezkel filed U.S. Patent Application No. 10/347,388 ("the '388 application").

30. On July 4, 2017, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,699,223 ("the '223 patent"), entitled "Routing of Data Including Multimedia Between Electronic Devices." A true and correct copy of the '223 patent is attached hereto as Exhibit A and is incorporated herein by reference. A true and correct copy of the prosecution history of the '223 patent is attached hereto as Exhibit K and is incorporated herein by reference.

31. The '223 patent claims priority to the '388 application and the '077 provisional application.

32. S.M.R Innovations and Y.M.R Tech are the owners, by assignment, of all right, title, and interest in and to the '223 patent, including the right to bring suit for past, present, and future patent infringement, and to collect past, present, and future damages.

33. On information and belief, there are no marking requirements regarding the '223 patent that were not complied with prior to Defendant receiving actual notice of its infringement of the '223 patent.

No Claim of the '223 Patent is Abstract

34. The claims of the '223 patent are focused on an advance over the prior art such

that their character as a whole is not directed to excluded subject matter, such as an abstract idea, or any other subject matter excluded under 35 U.S.C. §101.

35. The Patent Office determined that the inventions claimed in the claims of the ’223 patent are novel and nonobvious.

36. The ’223 patent solves real-world, technological problems, including, for example, providing solutions allowing the beneficial routing of information (e.g., multi-media content) between electronic devices. The ’223 patent discloses and claims benefits that were unknown in the art prior to the ’223 patent. The ’223 patent also discloses and claims technological solutions improving the manner and quality in which such information is delivered to consumers or consumed by them.

37. The ‘223 patent recognized that, as of its priority date, telecommunications technology was transforming society: “With the introduction of mobile communication devices, telecommunications technology has transformed society over the past decade. The ability to communicate almost anywhere, anytime, with few geographical limitations has resulted in a society, in both social and business contexts, which is almost always on-line. Mobile communication devices today typically have data processing ability which allows them to handle multi-media, and different types of devices are today able to communicate with each other, either directly via a permanent or temporary link or indirectly via a network.” ’223 patent at 1:28-38.

38. But the ’223 patent also recognized that many limitations in the relevant technology remained as of the ’223 patent’s priority date: “However, in general, the playing of multimedia data is limited, at least in the short term, to the device on which it is received, or to those in which the data originates. This limitation can be a considerable limitation on the user's

ability to enjoy the multimedia since different devices have very different capabilities regarding the playing of multimedia. The media playing devices considered specifically in the present disclosure include both mobile devices (cell phones, PDA's, handheld devices, etc.) and non-mobile devices (land/fixed line phones, computer monitors, Hi-Fi sets, speakers, etc.). Some of the devices may be used for just one or two media types and others are more general in their applicability, which is to say it is possible to use the devices in different modes for playing several media types: voice, text, images, and video. Likewise, the devices are used in various locations: at the office, home, car, hotel room, plane, outdoors, etc." *Id.* at 1:42-59.

39. The '223 patent recognized that these problems require a solution: "[I]t would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device." *Id.* at 2:23-28.

40. The '223 patent recognized that these problems required a technical solution and, to that end, discloses a data rerouting apparatus: *"*According to a first aspect of the present invention there is thus provided data rerouting apparatus for association with electronic equipment for rerouting data." *Id.* at 2:32-34.

41. The disclosed solution provides functionality for monitoring the environment: "an announcer device for indicating to surrounding equipment that said associated equipment is available for rerouting, thereby to enable receipt of rerouted data therefrom" and "a scout device for scanning surroundings of said associated equipment to find out about compatible equipment in the vicinity, thereby to reroute data thereto." *Id.* at 2:35-40.

42. The disclosed solution allows a user to choose where to route data without

directly interacting with the targeted device: "The apparatus preferably further comprises a user interface associated with said scout device for allowing a user to select between available compatible equipment to reroute data thereto." *Id.* at 2:41-44.

43. The '223 patent also discloses the following: "In addition, rerouting may be indirect. Indirect non-local routing relies on external service provider services, network and infrastructure. Indirect routing still requires the device initially receiving the communication to detect available receiving devices and determine their capability and availability and also requires potential rerouting recipients to announce their capabilities to the environment." *Id.* at 9:18-24.

44. The '223 patent discloses the ability to move multimedia streams to the device most suited for utilization in a dynamic and efficient fashion (e.g., causing a routing from a smaller screen (e.g., a smartphone) to a large television screen and associated sound system). *Id.* at 4:21-41, 1:60-67, 2:17-28.

45. The '223 patent discloses the ability to accept a call on one device even though it was directed to another device. *Id.* at 5:52-61. Using the solution disclosed in the '223 patent, for example, someone can route a call directed to his or her smartphone to a nearby computer or watch that is wirelessly linked with the smartphone.

46. Today, operating via a smartphone, someone can instruct other available devices (such as a TV screen) to play a desired movie. If no such screen and sound system is available, one may continue watching on a personal device such as a smartphone. The content can be obtained from the smartphone via the LAN or received via WAN. This solution is disclosed in the patent. *Id.* at 10:10-41. Prior to the invention, one could not route a movie being viewed on a

smartphone or similar device to a television.

47. These technological innovations provide various benefits, including a larger range of operating capabilities with increased efficiency: "The capability of routing of multi-media content (possibly including media transformation and multiplication, i.e. cloning) from one device to another may dramatically upgrade media playing quality, and grant the user the liberty to play the content on any device he wishes, preferably the most suitable device available, regardless of the origin of the content or the device to which the content may initially have been directed, or at which the content originates. Furthermore, by rerouting to a more capable device, a user's satisfaction level may be increased in comparison to having to remain with a device that say is limited by inferior data rate, processing power, memory capacity or input/output facilities. … [and] permits a range of possibilities for use which is currently not provided for." *Id.* at 4:21-41.

48. As set forth in the Declaration of Oded Shmueli, "The claims of the '223 patent recite features that address the above-described technical problems and challenges in the art, thereby providing specific technological solutions that improved the state of the art by providing, for example, new and improved ways for users to manage and consume multimedia content, and specifically new ways 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 the streaming protocol for presentation of the media content by a media player of said selected device. Thus, the claims are not directed to merely an abstract concept." Exhibit O at ¶ 20. This includes, for example, the following independent claims of the '223 patent:

1. A method of routing media data stream, comprising:

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;

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;

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;

setting up a wireless communication link with said selected compatible device via said local wireless communication network;

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.

14. A mobile apparatus of routing media data stream, comprising:

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;

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;

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;

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 stream according to said streaming protocol for presentation of said media content by a media player of said selected device.

> 22. A computer program product for routing media data stream, said computer program product comprising:
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> a non-transitory computer readable storage medium having stored thereon:
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> 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;
>
> 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;
>
> 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;
>
> 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
>
> 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.

Id.

49. As also set forth in the Declaration of Oded Shmueli, "The dependent claims of the '223 patent recite additional technological solutions. For example, claim 10 recites 'further comprising encrypting said media data stream of media content before routing to said selected device.' Such a capability may be desirable as explained in the '223 patent at 8:55-56 'to protect privacy, transmitted information may be encrypted.'" Exhibit O at ¶ 21.

50. As set forth in the Declaration of Oded Shmueli, "The solutions disclosed and claimed in the '223 patent are utilized in modern devices, including as exemplified in detail in the claim chart attached as Exhibit E." *See* Exhibit O at ¶ 18.

The Inventions Claimed In the '223 Patent Were Not Well-Understood, Routine, Or Conventional

51. The inventions claimed in the '223 patent were not well-understood, routine, or conventional as of the priority date of the '223 patent, but instead claim specific, novel, and nonobvious improvements to the prior art.

52. This is evidenced by the foregoing discussion in the '223 patent regarding the technological improvements provided by the claimed inventions.

53. That the inventions recited in the claims of the '223 patent, including the independent claims, were not well-understood, routine, or conventional at the time the '223 patent was filed is also evidenced by the prosecution history of the '223 patent.

54. The U.S. Patent & Trademark Office has stated that the duties of a Patent Examiner include the following:

- Reads and understands the invention set forth in the specification
- Determines whether the application is adequate to define the metes and bounds of the claimed invention
- Determines the scope of the claims
- Searches existing technology for claimed invention
- Determines patentability of the claimed invention

Exhibit I at 11, *The Role of the Patent Examiner*, Sue A. Purvis, Innovation and Outreach Coordinator, USPTO, available at https://www.uspto.gov/sites/default/files/about/offices/ous/04082013_StonyBrookU.pdf.

55. Thus, the Examiner who examined the '223 patent, in accordance with his duties,

(1) read and understood the invention set forth in the specification; (2) determined whether the application was adequate to define the metes and bounds of the claimed invention; (3) determined the scope of the claims; (4) searched existing technology for the inventions recited in the claims of the application; and (5) determined the patentability of the claims.

56. The Examiner performed these duties in his role as "advocate/protector of [the] public interest with respect to intellectual property," which involves a "cooperative investigation between the Examiner and the Applicant, which ensures an Applicant receives a patent only for that which they are entitled to in accordance with Patent laws." *Id.* at 8-9.

57. After conducting examination of the claims of the application underlying the '223 patent, the Examiner determined that the claims of the '223 patent were allowable over the art of record, stating that "[e]ach independent claim identifies the uniquely distinct features . . . "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 set forth below, the Examiner, after describing what he considered the closest art of record, stated that "[t]he cited prior arts of Hamberg, Mousseau, and Ortiz, either singularly or in combination, fail to anticipate or render the above features obvious":

3. The present invention is directed to transferring media stream from a receiving device to another device. Each independent claim identifies the uniquely distinct features: regarding claims 21, 31, and 39, ""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".

The closest prior art, Hamberg et al (US 7340214 B1), discloses to create multimedia file and transfer the file to other users. The multimedia file can be transferred by using cellular network or Bluetooth link. After creating the file, it is stored in a server and other users can access the file from the server. A user who downloaded the file from the server can send a copy of the file to another user (Fig. 1A, 1B, 2A, Col 1, Line 40-52, Col 4, Line 1-34, Col 5, Line 31-56, Col 10, Line 6-33, Col 11, Line 1-9).

Hamberg discloses to transfer multimedia file from one user to another user but does not disclose to stream the media content according to a streaming protocol to be played by a media player.

Mousseau et al (US 20010005864 A1) discloses to redirect attachment to a displayer in the vicinity of a mobile device. When a mobile device receives a

datagram (200A) indicating an attachment associated with the datagram, the mobile device then locates attachment displayer in the vicinity of the mobile device and informs the host system to send the attachment to the attachment displayer (Fig. 6, Par 0069-0074).

Mousseau discloses to send an attachment (multimedia content) directly to an attachment displayer. Mousseau does not disclose that the mobile device receives the attachment (multimedia content) and transfers the attachment (multimedia content) to another device according to a streaming protocol to be played by a media player.

Ortiz et al (US 20020058499 A1) discloses to data brokering between wireless devices and data rendering devices (DRD). A wireless device selects a data rendering device and forwards data to the selected rendering device (Abstract, Par 0046-0049, Par 0064). Ortiz does not disclose to stream the media content according to a streaming protocol to be played by a media player.

The cited prior arts of Hamberg, Mousseau, and Ortiz, either singularly or in combination, fail to anticipate or render the above features obvious.

April 26, 2017, Notice of Allowance.

58. The ’223 patent was filed on March 14, 2014. The first office action was mailed on March 9, 2016, almost two years after the Supreme Court decided *Alice Corp. v. CLS Bank, Int’l*, 573 U.S. 208 (2014), setting forth a standard for evaluating subject-matter eligibility under 35 U.S.C. § 101. The ’223 patent issued on July 4, 2017, more than three years after the *Alice* decision. The Examiner, in keeping with his job duties, therefore considered the Supreme Court’s standard for patent eligibility and determined that the claims of the ’223 patent were

patent eligible. In fact, two patent examiners signed the notice of allowance for the '223 patent, Harun Chowdhury and Kang B. Yao (a Supervisory Patent Examiner). As of 2017, Kwang B. Yao had been with the USPTO for more than 20 years. Exhibit P. In 2022, he was among the highest-paid 10 percent of USPTO employees, reflecting his significant experience and paygrade (a grade he has held since 2006). Exhibit Q (available at https://www.federalpay.org/employees/patent-and-trademark-office/yao-kwang-bin). Mr. Chowdhury had been a Patent Examiner for approximately five years. Exhibit R; Exhibit S. Had these Examiners determined, after their review of the art of record and their knowledge of the state of the art, that the subject matter recited in the claims of the '223 patent was directed to an abstract idea or nothing more than well-understood, routine, or conventional subject matter, they would not have allowed the claims to issue.

59. As set forth in the Declaration of Oded Shmueli, "The claims of the '223 patent do not preempt all systems and methods for routing a media data stream. For example, claim 14 of the '223 patent would not preempt systems and method for routing a media data stream that did not involve a controller adapted to instruct the routing of a media data stream to a selected device via a wireless communication link for streaming the media data stream according to a streaming protocol." Exhibit O at ¶ 42.

60. The '223 patent is compliant with 35 U.S.C. § 101.

61. The '223 patent is compliant with 35 U.S.C. § 102.

62. The '223 patent is compliant with 35 U.S.C. § 103.

63. The '223 patent is compliant with 35 U.S.C. § 112.

64. The '223 patent is presumed valid and enforceable in accordance with 35 U.S.C. §

282. The significance of the inventiveness of the ’223 patent is illustrated by the fact that it or its family members have been cited in 53 other patent applications, including the following patents and published patent applications: US7706785B2; CA2512046A1; IL160504A0; EP1599026B1; US20050239445A1; US7522549B2; US8908699B2; US20060013254A1; DE102005009082A1; US7500010B2; US11258531B2; US8909807B2; US9065595B2; US8589508B2; US8719399B2; US8135342B1; US20080091804A1; FR2911030B1; US10356195B2; US20080176554A1; RU2011105732A; US20100027966A1; JP2011530137A; JP2012503255A; US9015599B2; US8346233B2; US8320927B2; US8185489B2; US8615575B2; WO2010068497A2; EP2468030B1; US8886790B2; KR101649777B1; US8495196B2; US20120023201A1; US8998076B2; KR101901720B1; US9110963B2; KR101953308B1; US20140221087A1; US9336113B2; KR102257474B1; US10178182B2; US11115326B2; US20220086731A1; US9652196B2; CN107426388B; WO2018125682A1; US10856151B2; US9986394B1; and US10674552B1. These public documents and their related prosecution histories are incorporated herein by reference and provide concrete proof that the inventions claimed and disclosed in the ’223 patent were not well-understood, routine, or conventional at the time of the invention.

Plaintiffs’ U.S. Patent No. 10,547,648

65. On January 28, 2020, the United States Patent and Trademark Office duly and legally issued United States Patent No. 10,547,648 (“the ’648 patent”), entitled “Routing of Data Including Multimedia Between Electronic Devices.” A true and correct copy of the ’648 patent is attached hereto as Exhibit B and is incorporated herein by reference. A true and correct copy of the prosecution history of the ’648 patent is attached hereto as Exhibit L and is incorporated

herein by reference.

66. The ’648 patent claims priority to the ’388 application and the ’077 provisional application.

67. S.M.R Innovations and Y.M.R Tech are the owners, by assignment, of all right, title, and interest in and to the ’648 patent, including the right to bring suit for past, present, and future patent infringement, and to collect past, present, and future damages.

68. On information and belief, there are no marking requirements regarding the ’648 patent that were not complied with prior to Defendant receiving actual notice of its infringement of the ’648 patent.

No Claim of the ’648 Patent is Abstract

69. The claims of the ’648 patent are focused on advances over the prior art such that their character as a whole is not directed to excluded subject matter, such as an abstract idea, or any other subject matter excluded under 35 U.S.C. §101.

70. In fact, the Patent Office determined that the inventions claimed in the claims of the ’648 patent are novel and nonobvious.

71. The ’648 patent solves real-world, technological problems, including, for example, providing solutions allowing the beneficial routing of information (e.g., multi-media content) between electronic devices. The ’648 patent discloses and claims benefits that were unknown in the art prior to the ’648 patent. The ’648 patent also discloses and claims technological solutions improving the manner and quality in which such information is delivered to consumers or consumed by them.

72. The ’648 patent recognized that, as of its priority date, telecommunications

technology was transforming society: "With the introduction of mobile communication devices, telecommunications technology has transformed society over the past decade. The ability to communicate almost anywhere, anytime, with few geographical limitations has resulted in a society, in both social and business contexts, which is almost always on-line. Mobile communication devices today typically have data processing ability which allows them to handle multi-media, and different types of devices are today able to communicate with each other, either directly via a permanent or temporary link or indirectly via a network." '648 patent at 1:30-41.

73. But the '648 patent also recognized that many limitations in the relevant technology remained as of the '648 patent's priority date: "However, in general, the playing of multimedia data is limited, at least in the short term, to the device on which it is received, or to those in which the data originates. This limitation can be a considerable limitation on the user's ability to enjoy the multimedia since different devices have very different capabilities regarding the playing of multimedia. The media playing devices considered specifically in the present disclosure include both mobile devices (cell phones, PDA's, handheld devices, etc.) and non-mobile devices (land/fixed line phones, computer monitors, Hi-Fi sets, speakers, etc.). Some of the devices may be used for just one or two media types and others are more general in their applicability, which is to say it is possible to use the devices in different modes for playing several media types: voice, text, images, and video. Likewise, the devices are used in various locations: at the office, home, car, hotel room, plane, outdoors, etc." *Id.* at 1:45-62.

74. The '648 patent recognized that these problems require a solution: "[I]t would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content

independently of the initially targeted or originating device." *Id.* at 2:28-33.

75. The disclosed solution provides functionality for informing about media availability in another device:

> Another (optional) function of the announcer 30 is that of informing the environment, typically a user, that media content has been routed to it and is now usable (for example, to announce that a rerouted call is now available on this telephone). The latter kind of announcement, that is to say to persons rather than to electronic equipment, may typically comprise light flashes, rings, a loudspeaker sound or even a smell.

Id. at 7:45-52.

76. The disclosed solution also provides functionality for informing a device about an incoming call at another device: "The nearby phone rings, or flashes to indicate the rerouted call." '648 patent at 11:66-12:8.

77. The '648 patent also recognized that the shortcomings in the art required a technical solution and, to that end, discloses a data rerouting apparatus: "According to a first aspect of the present invention there is thus provided data rerouting apparatus for association with electronic equipment for rerouting data." *Id.* at 2:36-38.

78. The disclosed solution provides functionality for monitoring the environment: "an announcer device for indicating to surrounding equipment that said associated equipment is available for rerouting, thereby to enable receipt of rerouted data therefrom" and "a scout device for scanning surroundings of said associated equipment to find out about compatible equipment in the vicinity, thereby to reroute data thereto." *Id.* at 2:40-45.

79. The disclosed solution allows a user to choose where to route data without directly interacting with the targeted device: "The apparatus preferably further comprises a user interface associated with said scout device for allowing a user to select between available

compatible equipment to reroute data thereto." *Id.* at 2:46-49.

80. The '648 patent also discloses that routing may be performed automatically based on, for example, stored profiles: "In many situations, as briefly described in previous examples, certain apparatus activities may be initiated via user interaction, and preferred ways of enabling user interaction comprise displaying menus, or using voice menus, or conceivably even using feel or smell menus. Certain actions are preferably taken automatically, that is to say without user interaction. Such automation may be based on profiles, terms, and conditions. Conditions may for example be associated with the device that performs the routing, as well as with a device to which media is routed. Profiles may be stored with the modification apparatus of FIG. 2 or obtained from remote sources." *Id.* at 8:40-52.

81. The '648 patent also discloses indirect routing: "In addition, rerouting may be indirect. Indirect non-local routing relies on external service provider services, network and infrastructure. Indirect routing still requires the device initially receiving the communication to detect available receiving devices and determine their capability and availability and also requires potential rerouting recipients to announce their capabilities to the environment." *Id.* at 9:25-31.

82. The '648 patent discloses the ability to move multimedia streams to the device most suited for utilization in a dynamic and efficient fashion (e.g., causing a routing from a smaller screen (e.g., a smartphone) to a large television screen and associated sound system). *Id.* at 4:26-46, 1:63-2:3, 2:21-32.

83. The '648 patent discloses the ability to accept a call on one device even though it was directed to another device. *Id.* at 5:57-66.

84. Using the solution disclosed in the ’648 patent, for example, someone can route a call directed to his or her smartphone to a nearby computer or watch that is wirelessly linked with the smartphone. Using the solution disclosed in the ’648 patent, one can also be prompted by, for example, a watch that there is an incoming call via an associated smartphone. Prior to the invention, one would either miss the call or run to the smartphone to accept it, usually arriving just as the call disconnected. This routing solution utilized by modern devices is disclosed in the ’648 patent.

85. These technological innovations provide various benefits, including a larger range of operating capabilities with increased efficiency: “The capability of routing of multi-media content (possibly including media transformation and multiplication, i.e., cloning) from one device to another may dramatically upgrade media playing quality, and grant the user the liberty to play the content on any device he wishes, preferably the most suitable device available, regardless of the origin of the content or the device to which the content may initially have been directed, or at which the content originates. Furthermore, by rerouting to a more capable device, a user’s satisfaction level may be increased in comparison to having to remain with a device that say is limited by inferior data rate, processing power, memory capacity or input/output facilities. … [and] permits a range of possibilities for use which is currently not provided for.” *Id.* at 4:26-46.

86. The ’648 patent expressly describes various benefits associated with routing phone calls: “For example, the ability to route an incoming phone call, typically comprising voice, from a mobile device to a land/fixed line phone may generally be expected to upgrade the quality of the call. The ability to route hand held calendar content from a mobile device having

some digital ability to a computer monitor, may allow for better viewing of the information. Such rerouting may also enhance the user's ability to share the information with other people or with computer applications, for example applications that capture information displayed on the monitor and use it to trigger other events. Such applications can easily be run on a PC or laptop computer but are difficult to run on a mobile telephone for example." *Id.* at 4:47-59. It also describes various benefits associated with user notifications, such as, for example, that the ability to "inform a user about an availability of media content at the mobile device" may allow prompt action and response. *Id.* at 13:43-45.

87. As set forth in the Declaration of Oded Shmueli, "The claims of the '648 patent recite features that address the above-described technical problems and challenges in the art, thereby providing specific technological solutions that improved the state of the art by providing, for example, new and improved ways for users to manage and consume multimedia content. Thus, the claims are not directed to an abstract concept." *See* Exhibit O at ¶ 22. This includes, for example, the following independent claims of the '648 patent:

> 19. A method of informing a device about an availability of media content at a mobile device connected to a local area network (LAN), comprising:
>
> using the mobile device for:
>
> identifying one or more available devices compatible to handle the media content and connected to the LAN;
>
> wirelessly communicating information to an intermediate routing device connected to the LAN for indirectly routing messages or media content to at least one of the one or more available devices via said intermediate routing device; and
>
> wirelessly signaling the one or more available devices indicating an availability of a media content at the mobile device;

wherein the media content is originated from an external source disconnected from the LAN;

wherein the media content selected from a group consisting of: audio content and video content.

15. A mobile apparatus for informing a device about an availability of media content, comprising:

a receiver adapted to receive wirelessly, from an external source, media content selected from a group consisting of: audio content and video content; and

a controller adapted to identify one or more available devices connected to a local area network (LAN) and compatible to handle the media content;

wherein the controller is adapted to instruct communicating wirelessly information to an intermediate routing device connected to the LAN for indirectly routing messages or media content to at least one of the one or more available devices via said intermediate routing device;

wherein the controller is adapted to wirelessly signaling the one or more available devices indicating an availability of the media content at the mobile device;

wherein the media content is originated from an external source disconnected from the LAN.

19. A computer program product for a device for informing a user about an availability of media content at a mobile device, the computer program product comprising:

a non-transitory computer readable storage medium having stored thereon:

first program instructions executable by a processor to wirelessly communicating information to an intermediate routing device connected to a local area network (LAN) for indirectly receive messages or media content routed from one or more available devices connected to the LAN via the intermediate routing device; and

second program instructions executable by the processor to wirelessly receive signal from the mobile device indicating an availability of a media content at the mobile device;

third program instructions executable by the processor to inform the user of said device about an availability of a media content at the mobile device with one or more of the following: flash light, ring, and play a loudspeaker sound;

> wherein the media content is originated from an external source disconnected from the LAN;
>
> wherein the media content selected from a group consisting of: audio content, text content and video content.

Id.

88. As also set forth in the Declaration of Oded Shmueli, "The dependent claims of the '648 patent recite additional technological solutions. For example, claim 13 recites 'further comprising encrypting and routing the media content to the one or more available devices.' Such a capability may be desirable, as explained in '648 patent at 8:62-63, 'to protect privacy, transmitted information may be encrypted.'" Exhibit O at ¶ 23.

89. As set forth in the Declaration of Oded Shmueli, "the solutions disclosed and claimed in the '648 patent are utilized in modern devices, including as exemplified in detail in the claim chart attached as Exhibit F." *See* Exhibit O at ¶ 19.

The Inventions Claimed In the '648 Patent Were Not Well-Understood, Routine, Or Conventional

90. The inventions claimed in the '648 patent were not well-understood, routine, or conventional as of the priority date of the '648 patent, but instead claim specific, novel, and nonobvious improvements to the prior art.

91. This is evidenced by the foregoing discussion in the '648 patent regarding the technological improvements provided by the claimed inventions.

92. That the inventions recited in the claims of the '648 patent, including the independent claims, were not well-understood, routine, or conventional at the time the '648 patent was filed is also evidenced by the prosecution history of the '648 patent.

93. The Examiner who examined the '648 patent, in accordance with his duties, (1)

read and understood the invention set forth in the specification; (2) determined whether the application was adequate to define the metes and bounds of the claimed invention; (3) determined the scope of the claims; (4) searched existing technology for the inventions recited in the claims of the application; and (5) determined the patentability of the claims.

94. The Examiner performed these duties in his role as "advocate/protector of [the] public interest with respect to intellectual property," which involves a "cooperative investigation between the Examiner and the Applicant, which ensures an Applicant receives a patent only for that which they are entitled to in accordance with Patent laws." Exhibit I at 8-9.

95. After conducting examination of the claims of the application underlying the '648 patent, the Examiner determined that the claims of the '648 patent were allowable over the art of record. The Examiner, after describing what he considered the closest art of record, stated that "the combined teachings of the prior art references do not teach or reasonably suggest the claimed invention as a whole":

REASONS FOR ALLOWANCE

The present invention is directed to transferring media stream from a receiving device to another device.

The closest prior art, Hamberg et al (US 7340214 B1), discloses to create multimedia file and transfer the file to other users. The multimedia file can be transferred by using the access point (intermediate routing device) of the cellular network. After creating the file, it is stored in a server and other users can access the file from the server. A user who downloaded the file from the server can send a copy of the file to another user through the access point of a GSM network (Fig. 1G, 1H, 2A, Col 1, Line 40-52, Col 4, Line 1-34, Col 5, Line 31-56, Col 10, Line 6-33, Col 11, Line 1-9, Col 15, Line 24-36, Col 16, Line 6-25).

Hamberg discloses that the intermediate routing device (GSM access point) is connected to a wide area network (cellular network), not a local area network (LAN) as recited in the claim.

Mooney et al (US 20020132582 A1) discloses to transfer received audio from the cell phone 104 to a cordless terminal 102 (Fig. 2, Par 0036-0045). The audio is transferred from cell phone 104 to terminal 102 over Bluetooth connection. Therefore, the audio is not transferred via an intermediate routing device connected to a LAN.

Mousseau et al (US 20010005864 A1) discloses to redirect attachment to a displayer in the vicinity of a mobile device. When a mobile device receives a datagram (200A) indicating an attachment associated with the datagram, the mobile device then locates attachment displayer in the vicinity of the mobile

> device and informs the host system to send the attachment to the attachment displayer (Fig. 6, Par 0069-0074). Mousseau does not disclose to transfer the attachment via an intermediate routing device connected to a LAN.
>
> The references on record discloses individual features which are recited in the claimed invention. However, the combined teachings of the prior art references do not teach or reasonably suggest the claimed invention as a whole.

Sept. 20, 2019, Notice of Allowance.

96. The '648 patent was filed on May 30, 2017. The first office action was mailed on August 6, 2018, more than four years after the Supreme Court decided *Alice Corp. v. CLS Bank, Int'l*, 573 U.S. 208 (2014), setting forth a standard for evaluating subject-matter eligibility under 35 U.S.C. § 101. The '648 patent issued on January 28, 2020, about five and a half years after the *Alice* decision. The Examiner who examined the '648 patent, Harun Chowdhury, in keeping with his job duties, therefore considered the Supreme Court's standard for patent eligibility and determined that the claims of the '648 patent were patent eligible. As of 2020, Mr. Chowdhury had been a Patent Examiner for approximately eight years. Exhibit R; Exhibit S. Had he determined, after his review of the art of record and his knowledge of the state of the art, that the subject matter recited in the claims of the '648 patent was directed to an abstract idea or nothing more than well-understood, routine, or conventional subject matter, he would not have allowed the claims to issue.

97. As set forth in the Declaration of Oded Shmueli, "The claims of the '648 patent do not preempt all systems and methods for informing a device about an availability of media content. For example, the claims of the '648 patent do not preempt systems and methods for

routing audio-video or streaming data that do not involve a controller adapted to instruct communicating wirelessly information to an intermediate routing device connected to a LAN for indirectly routing messages or media content to at least one available device via the intermediate routing device. Likewise, the claims of the '648 patent would not preempt systems and methods for routing audio-video or streaming data that do not involve a controller adapted to wirelessly signaling an available device indicating an availability of the media content at the mobile device." Exhibit O at ¶ 43.

98. The '648 patent is compliant with 35 U.S.C. § 101.

99. The '648 patent is compliant with 35 U.S.C. § 102.

100. The '648 patent is compliant with 35 U.S.C. § 103.

101. The '648 patent is compliant with 35 U.S.C. § 112.

102. The '648 patent is presumed valid and enforceable in accordance with 35 U.S.C. § 282.

103. The significance of the inventiveness of the '648 patent is illustrated by the fact that it or its family members have been cited in 53 other patent applications, including the following patents and published patent applications: US7706785B2; CA2512046A1; IL160504A0; EP1599026B1; US20050239445A1; US7522549B2; US8908699B2; US20060013254A1; DE102005009082A1; US7500010B2; US11258531B2; US8909807B2; US9065595B2; US8589508B2; US8719399B2; US8135342B1; US20080091804A1; FR2911030B1; US10356195B2; US20080176554A1; RU2011105732A; US20100027966A1; JP2011530137A; JP2012503255A; US9015599B2; US8346233B2; US8320927B2; US8185489B2; US8615575B2; WO2010068497A2; EP2468030B1; US8886790B2;

KR101649777B1; US8495196B2; US20120023201A1; US8998076B2; KR101901720B1; US9110963B2; KR101953308B1; US20140221087A1; US9336113B2; KR102257474B1; US10178182B2; US11115326B2; US20220086731A1; US9652196B2; CN107426388B; WO2018125682A1; US10856151B2; US9986394B1; and US10674552B1. These public documents and their related prosecution histories are incorporated herein by reference and provide concrete proof that the inventions claimed and disclosed in the '648 patent were not well-understood, routine, or conventional at the time of the invention.

Plaintiffs' U.S. Patent No. 8,711,866

104. On April 29, 2014, the United States Patent and Trademark Office duly and legally issued United States Patent No. 8,711,866 ("the '866 patent"), entitled "Routing of Data Including Multimedia Between Electronic Devices." A true and correct copy of the '866 patent is attached hereto as Exhibit C and is incorporated herein by reference. A true and correct copy of the prosecution history of the '866 patent is attached hereto as Exhibit M and is incorporated herein by reference.

105. The '866 patent claims priority to the '388 application and the '077 provisional application.

106. S.M.R Innovations and Y.M.R Tech are the owners, by assignment, of all right, title, and interest in and to the '866 patent, including the right to bring suit for past, present, and future patent infringement, and to collect past, present, and future damages.

107. On information and belief, there are no marking requirements regarding the '866 patent that were not complied with prior to Defendant receiving actual notice of its infringement of the '866 patent.

No Claim of the '866 Patent is Abstract

108. The claims of the '866 patent are focused on advances over the prior art such that their character as a whole is not directed to excluded subject matter, such as an abstract idea, or any other subject matter excluded under 35 U.S.C. §101.

109. In fact, the Patent Office determined that the inventions claimed in the claims of the '866 patent are novel and nonobvious.

110. The '866 patent solves real-world, technological problems, including, for example, providing solutions allowing the beneficial routing of information (e.g., audio, video, or other multi-media) between electronic devices. The '866 patent discloses and claims benefits that were unknown in the art prior to the '866 patent. The '866 patent also discloses and claims technological solutions improving the manner and quality in which such information is delivered to consumers or consumed by them.

111. The '866 patent recognized that, as of its priority date, telecommunications technology was transforming society: "With the introduction of mobile communication devices, telecommunications technology has transformed society over the past decade. The ability to communicate almost anywhere, anytime, with few geographical limitations has resulted in a society, in both social and business contexts, which is almost always on-line. Mobile communication devices today typically have data processing ability which allows them to handle multi-media, and different types of devices are today able to communicate with each other, either directly via a permanent or temporary link or indirectly via a network." '866 patent at 1:24-34.

112. But the '866 patent also recognized that many limitations in the relevant technology remained as of the '866 patent's priority date: "However, in general, the playing of

multimedia data is limited, at least in the short term, to the device on which it is received, or to those in which the data originates. This limitation can be a considerable limitation on the user's ability to enjoy the multimedia since different devices have very different capabilities regarding the playing of multimedia. The media playing devices considered specifically in the present disclosure include both mobile devices (cell phones, PDA's, handheld devices, etc.) and non-mobile devices (land/fixed line phones, computer monitors, Hi-Fi sets, speakers, etc.). Some of the devices may be used for just one or two media types and others are more general in their applicability, which is to say it is possible to use the devices in different modes for playing several media types: voice, text, images, and video. Likewise, the devices are used in various locations: at the office, home, car, hotel room, plane, outdoors, etc." *Id.* at 1:38-55.

113. The '866 patent recognized that these problems require a solution: "[I]t would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device." *Id.* at 2:20-25.

114. The '866 patent also recognized that the shortcomings in the art required a technical solution and, to that end, discloses a data rerouting apparatus: *"*According to a first aspect of the present invention there is thus provided data rerouting apparatus for association with electronic equipment for rerouting data." *Id.* at 2:29-31.

115. The disclosed solution provides functionality for interacting/communicating with the environment: "an announcer device for indicating to surrounding equipment that said associated equipment is available for rerouting, thereby to enable receipt of rerouted data therefrom" and "a scout device for scanning surroundings of said associated equipment to find

out about compatible equipment in the vicinity, thereby to reroute data thereto." *Id.* at 2:32-37.

116. The disclosed solution allows a user to choose where to route data even without directly interacting with the targeted device: "The apparatus preferably further comprises a user interface associated with said scout device for allowing a user to select between available compatible equipment to reroute data thereto." *Id.* at 2:38-41.

117. The '866 patent also discloses that routing may be performed by user interaction or automatically based on, for example, pre-stored profiles: "In many situations, as briefly described in previous examples, certain apparatus activities may be initiated via user interaction, and preferred ways of enabling user interaction comprise displaying menus, or using voice menus, or conceivably even using feel or smell menus. Certain actions are preferably taken automatically, that is to say without user interaction. Such automation may be based on profiles, terms, and conditions. Conditions may for example be associated with the device that performs the routing, as well as with a device to which media is routed. Profiles may be stored with the modification apparatus of FIG. 2 or obtained from remote sources." *Id.* at 8:27-39.

118. The '866 patent discloses the ability to move audio or other multimedia streams to a device or devices most suited for utilization in a dynamic and efficient fashion (e.g., causing a routing from a smaller screen (e.g., a smartphone) to a large television screen and associated sound system) or from a single, smaller speaker (e.g. smartphone speaker) to a number of larger ones (e.g. smart speaker/s). *Id.* at 4:18-37, 1:56-63.

119. The '866 patent also discloses indirect routing: "In addition, rerouting may be indirect. Indirect non-local routing relies on external service provider services, network and infrastructure. Indirect routing still requires the device initially receiving the communication to

detect available receiving devices and determine their capability and availability and also requires potential rerouting recipients to announce their capabilities to the environment." *Id.* at 9:12-19.

120. The '866 patent discloses the ability to accept a call on one device and listen to it on another device. *Id.* at 5:51-56. Using the solution disclosed in the '866 patent, for example, someone can route a call directed to his or her smartphone to a nearby speaker that is wirelessly linked with the smartphone. This solution utilized by modern devices is disclosed in the '866 patent.

121. Today, operating via a smartphone, someone can instruct one or more other available devices (such as a TV screen or smart speakers) to play desired music or music video. *Id.* at 1:56-63. If no such sound system is available, one may continue listening on a personal device such as a smartphone. If the device does not have a screen, one may only listen to the music without the video. The content can be obtained from the smartphone via the LAN. This solution is disclosed in the patent. *Id.* at 10:5-10:16. Prior to the invention, one could not receive music on a smartphone, let alone route the music to a television or a speaker. One of course could not route a music video to a TV screen or route only the music of that video to a smart speaker.

122. These technological innovations provide various benefits, including a larger range of operating capabilities with increased efficiency: "The capability of routing of multi-media content (possibly including media transformation and multiplication, i.e. cloning) from one device to another may dramatically upgrade media playing quality, and grant the user the liberty to play the content on any device he wishes, preferably the most suitable device available,

regardless of the origin of the content or the device to which the content may initially have been directed, or at which the content originates. Furthermore, by rerouting to a more capable device, a user's satisfaction level may be increased in comparison to having to remain with a device that say is limited by inferior data rate, processing power, memory capacity or input/output facilities. … [and] permits a range of possibilities for use which is currently not provided for." *Id.* at 4:18-37.

123. The '866 patent expressly describes various benefits associated with routing phone calls: "For example, the ability to route an incoming phone call, typically comprising voice, from a mobile device to a land/fixed line phone may generally be expected to upgrade the quality of the call…" and "Such rerouting may also enhance the user's ability to share the information with other people…" *Id.* at 4:38-45.

124. The '866 patent also expressly describes various benefits associated with routing music to one of more devices at the same time: "Audio and voice-type media may typically be routed to… [Hi-Fi] sets (mobile and non mobile), car audio systems, TV sets, speakers…" *Id.* at 10:5-15. "[F]or example an incoming signal comprising music and voice could be cloned. … The other clone could be transmitted to speakers to give high quality reproduction of the music." *Id.* at 9:52-57. "Most current mobile devices in particular provide relatively poor multi-media capabilities including digital audio, image, and/or video capabilities (as well as other media capabilities) in comparison with other existing devices such as… [TV] screens and Hi-Fi sets. Compared to high quality media playing equipment, even 3rd generation mobile devices (3G) are of inferior quality." *Id.* at 1:56-63.

125. The solutions disclosed and claimed in the '866 patent are utilized in modern

devices, including as exemplified in detail in the claim chart attached as Exhibit G.

126. The claims of the '866 patent recite features that address the technical problems and challenges in the art, thereby providing specific technological solutions that improved the state of the art by providing, for example, new and improved ways for users to manage and consume content. Thus, the claims are not directed to an abstract concept.

127. This includes, for example, the following independent claims of the '866 patent:

> 1. Apparatus for routing audio-video data, comprising a streaming device, the apparatus comprising:
>
> (a) an announcer device configured to indicate wirelessly to surrounding media handling devices that said streaming device is available for routing or rerouting; and
>
> (b) a scout device configured to wirelessly scan surroundings of said streaming device to identify surrounding media handling device as being compatible to given media and determine availability of said compatible media handling devices to receive rerouted audio-video data from said streaming device, said scout device further being configured to determine media type requirements of said compatible media handling devices, said media type requirements comprising screen capability and a data rate requirement;
>
> said apparatus being configured to set up a bidirectional wireless communication link between said streaming device and respective media handling devices, said bidirectional wireless link able to carry said rerouted data as streaming audio-video data over either direction of said bidirectional communication link;
>
> (c) a media transformer, configured to transform media into a form that accords with respective determined media type requirements, there being a plurality of said media type requirements;
>
> (d) a user interface for allowing a user to select one of said plurality of media type requirements for transforming at said media transformer; and
>
> (e) a media cloner, associated with said media transformer, for making multiple copies of said media data, thereby to enable said apparatus to redirect said media data to a plurality of locations, at least one of said multiple copies being transformed at said media transformer.
>
> 19. A method of routing streaming data comprising:

wirelessly scouting a. vicinity of said streaming device with a scanning device,

through said scanning device determining availability of surrounding media handling devices in said vicinity, wherein the availability is determined based, at least partly, on media type requirements of said media handling devices, and

routing or rerouting streaming data between said streaming device and at least one target device selected from said media handling devices in said scanned vicinity found to be available, said routing or rerouting comprising setting up a bidirectional wireless data link between said target device and said streaming device, said bidirectional wireless link being capable of carrying a multimedia streaming data in either direction of said bidirectional data link;

transforming media into forms respectively that accord with said determined media type requirements,

allowing a user to select, via a user interface, or selecting based on a profile, one of said determined media type requirements for transforming; and

making multiple copies of incoming streaming data to redirect a single incoming communication to a plurality of locations, at least some of said multiple copies being transformed.

20. A method of wirelessly routing streaming data comprising:

scouting a vicinity of a first mobile device with a scanning device, said scanning device being associated with said first mobile device,

through said scanning device determining compatibility and availability of media handling devices in the vicinity of, said first mobile device for receiving of bidirectional streaming data directed from said mobile device via a bidirectional wireless link set up between said mobile device and respective media handling devices, wherein the availability is determined based, at least partly, on media type requirements of said respective media handling devices and media type of said streaming data, the method further comprising streaming data in either direction over said bidirectional wireless link; and

making multiple copies of said media data, thereby to redirect said media data to a plurality of locations, at least one of said multiple copies being transformed in accordance with a respective determined compatibility.

21. Apparatus for routing and rerouting streaming data, the apparatus being mobile and comprising:

a streaming device comprising:

an announcer device configured to indicate to surrounding media handling devices that said apparatus is available to receive streaming data, thereby to enable receipt of routed and rerouted streaming data from said surrounding media handling devices;

a scout device configured to scan surroundings of said apparatus to identify surrounding media handling devices and determine compatibility requirements availability of said identified media handling devices in said surroundings, thereby to route and reroute streaming data from said streaming device to a selected one of said media handling devices, the apparatus being configured to set up a bidirectional wireless communication link between respective ones of said media handling devices and said streaming device, said bidirectional link being capable of carrying said streaming data in either direction of said bidirectional link, and wherein said scout device is operable to determine media type requirements of aid respective media handling devices; and

a media eloper, for making multiple copies of said media data, thereby to enable said apparatus to redirect said media data to a plurality of locations.

22. Apparatus for routing and rerouting streaming data, the apparatus being mobile and comprising:

a streaming device comprising:

an announcer device configured to indicate to surrounding media handling devices that said streaming device is available to receive streaming data, thereby to enable receipt of rerouted data from said surrounding media handling devices, and

a scout device configured to scan surroundings of said streaming device to identify surrounding media handling devices as being compatible to handle given media, and determine availability of said identified compatible media handling devices, thereby to reroute streaming data between said streaming device and a selected one of said surrounding media handling devices, said scout device further being configured to determine media type requirements of said compatible media handling devices, said apparatus configured to set up a bidirectional wireless communication link between said streaming device and a respective one of said media handling devices, said bidirectional link carrying streaming data over either direction as required of said bidirectional link;

a media transformer, configured to transform media into forms that accord with respective determined media type requirements, wherein there are a plurality of said types;

a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer, and

a media cloner, associated with said media transformer, for making multiple copies of a single incoming data stream, thereby to enable said apparatus to redirect said single incoming data stream to a plurality of locations, at least some of said multiple copies being transformed via said media transformer.

23. Apparatus for routing'and rerouting media data, the apparatus being mobile and comprising:

a media data transfer device comprising:

an announcer device configured for indicating to surrounding media handling devices that said media data transfer device is available to receive media data, thereby to enable receipt of rerouted data from said surrounding media handling devices, and

a scout device configured for scanning surroundings to identify surrounding media handling devices as being compatible with given media and determine availability of said identified compatible media handling devices, thereby to reroute media data from said media data transfer device to a selected one of said surrounding media handling devices, said scout device further being configured to determine media type requirements of said media handling devices;

a media transformer, configured to transform media into a form that accords with respective determined media type requirements, there being a plurality of said media type requirements;

a user interface for allowing a user to select one of said plurality of media type requirements for transforming at said media transformer, and

a media cloner, associated with said media transformer, for making multiple copies of said media data, thereby to enable said apparatus to redirect said media data to a plurality of locations, at least some of said multiple copies being transformed at said media transformer.

128. The dependent claims of the ’866 patent recite additional technological solutions. For example, claim 7 recites the “[a]pparatus according to claim 1, comprising a mobile device, a mobile handset, a computer, or a PDA, wherein said apparatus is configured to receive or generate a call and to redirect said call to a respective media handling device.”

129. As a further example, claim 15 recites the "[a]pparatus according to claim 1, further comprising control functionality operable to carry out said rerouting through locally available infrastructure."

130. As yet another example, claim 17 recites the "[a]pparatus according to claim 1, wherein said streaming data in a first link direction is directable via multiple channels to each of a plurality of surrounding devices."

131. As yet another example, claim 24 recites, "[t]he apparatus of claim 23, wherein said media type requirements comprise a screen capability."

The Inventions Claimed In the '866 Patent Were Not Well-Understood, Routine, Or Conventional

132. The inventions claimed in the '866 patent were not well-understood, routine, or conventional as of the priority date of the '866 patent, but instead claim specific, novel, and nonobvious improvements to the prior art.

133. This is evidenced by the foregoing discussion in the '866 patent regarding the technological improvements provided by the claimed inventions.

134. That the inventions recited in the claims of the '866 patent, including the independent claims, were not well-understood, routine, or conventional at the time the '866 patent was filed is also evidenced by the prosecution history of the '866 patent.

135. The Examiner who examined the '866 patent, in accordance with his duties, (1) read and understood the invention set forth in the specification; (2) determined whether the application was adequate to define the metes and bounds of the claimed invention; (3) determined the scope of the claims; (4) searched existing technology for the inventions recited in the claims of the application; and (5) determined the patentability of the claims.

136. The Examiner performed these duties in his role as "advocate/protector of [the] public interest with respect to intellectual property," which involves a "cooperative investigation between the Examiner and the Applicant, which ensures an Applicant receives a patent only for that which they are entitled to in accordance with Patent laws." Exhibit I at 8-9.

137. After conducting examination of the claims of the application underlying the '866 patent, the Examiner determined that the claims of the '866 patent were allowable over the art of record. *See* Jan. 14, 2014, Notice of Allowance. This evidences that the claims of the '866 patent were not well-understood, routine, or conventional as of the priority date of the '866 patent.

138. The claims of the '866 patent do not preempt all systems and methods for routing audio-video or streaming data.

139. The '866 patent is compliant with 35 U.S.C. § 101.

140. The '866 patent is compliant with 35 U.S.C. § 102.

141. The '866 patent is compliant with 35 U.S.C. § 103.

142. The '866 patent is compliant with 35 U.S.C. § 112.

143. The '866 patent is presumed valid and enforceable in accordance with 35 U.S.C. § 282.

144. The significance of the inventiveness of the '866 patent is illustrated by the fact that it or its family members have been cited in 53 other patent applications, including the following patents and published patent applications: US7706785B2; CA2512046A1; IL160504A0; EP1599026B1; US20050239445A1; US7522549B2; US8908699B2; US20060013254A1; DE102005009082A1; US7500010B2; US11258531B2; US8909807B2; US9065595B2; US8589508B2; US8719399B2; US8135342B1; US20080091804A1;

FR2911030B1; US10356195B2; US20080176554A1; RU2011105732A; US20100027966A1; JP2011530137A; JP2012503255A; US9015599B2; US8346233B2; US8320927B2; US8185489B2; US8615575B2; WO2010068497A2; EP2468030B1; US8886790B2; KR101649777B1; US8495196B2; US20120023201A1; US8998076B2; KR101901720B1; US9110963B2; KR101953308B1; US20140221087A1; US9336113B2; KR102257474B1; US10178182B2; US11115326B2; US20220086731A1; US9652196B2; CN107426388B; WO2018125682A1; US10856151B2; US9986394B1; and US10674552B1. These public documents and their related prosecution histories are incorporated herein by reference and provide concrete proof that the inventions claimed and disclosed in the '866 patent were not well-understood, routine, or conventional at the time of the invention.

Plaintiffs' U.S. Patent No. 7,969,990

145. On June 28, 2011, the United States Patent and Trademark Office duly and legally issued United States Patent No. 7,969,990 ("the '990 patent"), entitled "Routing of Data Including Multimedia Between Electronic Devices." A true and correct copy of the '990 patent is attached hereto as Exhibit D and is incorporated herein by reference. A true and correct copy of the prosecution history of the '990 patent is attached hereto as Exhibit N and is incorporated herein by reference.

146. The '990 patent claims priority to the '077 provisional application.

147. S.M.R Innovations and Y.M.R Tech are the owners, by assignment, of all right, title, and interest in and to the '990 patent, including the right to bring suit for past, present, and future patent infringement, and to collect past, present, and future damages.

148. On information and belief, there are no marking requirements regarding the '990

patent that were not complied with prior to Defendant receiving actual notice of its infringement of the ’990 patent.

No Claim of the ’990 Patent is Abstract

149. The claims of the ’990 patent are focused on advances over the prior art such that their character as a whole is not directed to excluded subject matter, such as an abstract idea, or any other subject matter excluded under 35 U.S.C. §101.

150. In fact, the Patent Office determined that the inventions claimed in the claims of the ’990 patent are novel and nonobvious.

151. The ’990 patent solves real-world, technological problems, including, for example, providing solutions allowing the beneficial routing of information (e.g., audio, video, or other multi-media) between electronic devices. The ’990 patent discloses and claims benefits that were unknown in the art prior to the ’990 patent. The ’990 patent also discloses and claims technological solutions improving the manner and quality in which such information is delivered to consumers or consumed by them.

152. The ’990 patent recognized that, as of its priority date, telecommunications technology was transforming society: “With the introduction of mobile communication devices, telecommunications technology has transformed society over the past decade. The ability to communicate almost anywhere, anytime, with few geographical limitations has resulted in a society, in both social and business contexts, which is almost always on-line. Mobile communication devices today typically have data processing ability which allows them to handle multi-media, and different types of devices are today able to communicate with each other, either directly via a permanent or temporary link or indirectly via a network.” ’990 patent at 1:23-33.

153. But the ’990 patent also recognized that many limitations in the relevant technology remained as of the ’990 patent’s priority date: “However, in general, the playing of multimedia data is limited, at least in the short term, to the device on which it is received, or to those in which the data originates. This limitation can be a considerable limitation on the user's ability to enjoy the multimedia since different devices have very different capabilities regarding the playing of multimedia. The media playing devices considered specifically in the present disclosure include both mobile devices (cell phones, PDA’s, handheld devices, etc.) and non-mobile devices (land/fixed line phones, computer monitors, Hi-Fi sets, speakers, etc.). Some of the devices may be used for just one or two media types and others are more general in their applicability, which is to say it is possible to use the devices in different modes for playing several media types: voice, text, images, and video. Likewise, the devices are used in various locations: at the office, home, car, hotel room, plane, outdoors, etc.” *Id.* at 1:37-53.

154. The ’990 patent recognized that these problems require a solution: “[I]t would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.” *Id.* at 2:17-22.

155. The ’990 patent also recognized that the shortcomings in the art required a technical solution and, to that end, discloses a data rerouting apparatus: *“*According to a first aspect of the present invention there is thus provided data rerouting apparatus for association with electronic equipment for rerouting data.” *Id.* at 2:26-28.

156. The disclosed solution provides functionality for interacting/communicating with the environment: “an announcer device for indicating to surrounding equipment that said

associated equipment is available for rerouting, thereby to enable receipt of rerouted data therefrom" and "a scout device for scanning surroundings of said associated equipment to find out about compatible equipment in the vicinity, thereby to reroute data thereto." *Id.* at 2:29-34.

157. The disclosed solution allows a user to choose where to route data even without directly interacting with the targeted device: "The apparatus preferably further comprises a user interface associated with said scout device for allowing a user to select between available compatible equipment to reroute data thereto." *Id.* at 2:35-38.

158. The '990 patent also discloses that routing may be performed by user interaction or automatically based on, for example, pre-stored profiles: "In many situations, as briefly described in previous examples, certain apparatus activities may be initiated via user interaction, and preferred ways of enabling user interaction comprise displaying menus, or using voice menus, or conceivably even using feel or smell menus. Certain actions are preferably taken automatically, that is to say without user interaction. Such automation may be based on profiles, terms, and conditions. Conditions may for example be associated with the device that performs the routing, as well as with a device to which media is routed. Profiles may be stored with the modification apparatus of FIG. 2 or obtained from remote sources." *Id.* at 8:19-30.

159. The '990 patent discloses the ability to move audio or other multimedia streams to a device or devices most suited for utilization in a dynamic and efficient fashion (e.g., causing a routing from a smaller screen (e.g., a smartphone) to a large television screen and associated sound system) or from a single, smaller speaker (e.g. smartphone speaker) to a number of larger ones (e.g. smart speaker/s). *Id.* at 4:13-33, 1:54-61, 2:11-22.

160. The ’990 patent discloses the ability to accept a call on one device and listen to it on another device. *Id.* at 5:41-57. Using the solution disclosed in the ’990 patent, for example, someone can route a call directed to his or her smartphone to a nearby speaker that is wirelessly linked with the smartphone. This solution utilized by modern devices is disclosed in the ’990 patent.

161. Today, operating via a smartphone, someone can instruct one or more other available devices (such as smart speakers) to play desired music. *Id.* at 1:54-59. If no such sound system is available, one may continue listening on a personal device such as a smartphone. The content can be obtained from the smartphone via the LAN. This solution is disclosed in the patent. *Id.* at 9:63-10:2, 10:10-41. Prior to the invention, one could not receive music on a smartphone, let alone route the music to a television or a speaker.

162. These technological innovations provide various benefits, including a larger range of operating capabilities with increased efficiency: “The capability of routing of multi-media content (possibly including media transformation and multiplication, i.e. cloning) from one device to another may dramatically upgrade media playing quality, and grant the user the liberty to play the content on any device he wishes, preferably the most suitable device available, regardless of the origin of the content or the device to which the content may initially have been directed, or at which the content originates. Furthermore, by rerouting to a more capable device, a user’s satisfaction level may be increased in comparison to having to remain with a device that say is limited by inferior data rate, processing power, memory capacity or input/output facilities. … [and] permits a range of possibilities for use which is currently not provided for.” *Id.* at 4:13-33.

163. The ’990 patent expressly describes various benefits associated with routing phone calls: “For example, the ability to route an incoming phone call, typically comprising voice, from a mobile device to a land/fixed line phone may generally be expected to upgrade the quality of the call…” and “Such rerouting may also enhance the user’s ability to share the information with other people…” *Id.* at 4:34-41.

164. The ’990 patent also expressly describes various benefits associated with routing music: “Audio and voice-type media may typically be routed to… [Hi-Fi] sets (mobile and non mobile), car audio systems, TV sets, speakers…” *Id*. at 10:3-7. “[F]or example an incoming signal comprising music and voice could be cloned. … The other clone could be transmitted to speakers to give high quality reproduction of the music.” *Id.* at 9:46-48. “Most current mobile devices in particular provide relatively poor multi-media capabilities including digital audio, image, and/or video capabilities (as well as other media capabilities) in comparison with other existing devices such as… [TV] screens and Hi-Fi sets. Compared to high quality media playing equipment, even 3rd generation mobile devices (3G) are of inferior quality.” *Id.* at 1:54-61.

165. The solutions disclosed and claimed in the ’990 patent are utilized in modern devices, including as exemplified in detail in the claim chart attached as Exhibit H.

166. The claims of the ’990 patent recite features that address the technical problems and challenges in the art, thereby providing specific technological solutions that improved the state of the art by providing, for example, new and improved ways for users to manage and consume content. Thus, the claims are not directed to an abstract concept.

167. This includes, for example, the following independent claims of the ’990 patent:

1. Apparatus for rerouting communication data, comprising:

a mobile communication device comprising:

an announcer device associated with said mobile communication device, and configured for indicating to surrounding equipment that said mobile communication device is available to receive rerouting, thereby to enable receipt of rerouted data from said surrounding equipment, and

a scout device associated with said mobile communication device, configured for scanning surroundings of said associated mobile communication device to identify and determine availability of compatible equipment in the vicinity, thereby to reroute data from said mobile communication device to a selected one of said surrounding equipment, wherein said rerouting comprises setting up a bidirectional communication link between said mobile communication device and said selected surrounding equipment, said bidirectional link having a first link direction from said mobile communication device to said selected surrounding equipment and a second link direction from said selected surrounding equipment to said mobile communication device, said bidirectional link carrying streaming data over both directions of said first link direction and said second link direction, and wherein said scout device is operable to determine media type requirements of said compatible equipment;

a media transformer, associated with said scout device, for transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer and

a media cloner, associated with said media transformer, for making multiple copies of a single incoming data stream, thereby to enable said apparatus to redirect said single incoming data stream to a plurality of locations, at least some of said multiple copies being redirected via said media transformer.

16. A method of rerouting communication data comprising:

receiving said data at a first mobile device,

scouting a vicinity of said first mobile device with a scanning device, said scanning device being associated with said first mobile device,

through said scanning device determining availability of other devices in the vicinity of said first mobile device, wherein the availability is determined based, at least partly, on media type requirements of said compatible equipment, and

rerouting said data from said mobile device to at least one target device selected from devices in said scanned vicinity found to be available, said rerouting

comprising setting up a bidirectional data link between said target device and said mobile device, said bidirectional data link having a first direction from said mobile device to said target device and a second direction from said target device to said mobile device, said bidirectional link being capable of carrying a multimedia datastream in both of said first direction and said second direction between said first mobile device and said selected target device

transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer and

making multiple copies of incoming data to redirect a single incoming communication to a plurality of locations, at least some of said multiple copies being redirected via said media transformer.

31. A method of routing communication data comprising:

scouting a vicinity of a first mobile device with a scanning device, said scanning device being associated with said first mobile device,

through said scanning device determining availability of other devices in the vicinity of said first mobile device for receiving of bidirectional streaming data directed from said mobile device via a bidirectional link set up between said mobile device and said target device, said bidirectional link having a first data streaming direction from said mobile device to said target device and a second data streaming direction from said target device to said mobile device, wherein the availability is determined based, at least partly, on media type requirements of said compatible equipment, and media type of said communication data, the method further comprising streaming data in both of said first direction and said second direction

transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer and

making multiple copies of a single incoming data stream, thereby to redirect said single incoming data stream to a plurality of locations, at least some of said multiple copies being redirected via said media transformer.

33. Apparatus for rerouting communication data, comprising:

> mobile electronic equipment comprising:
>
> an announcer device associated with said first electronic equipment, and configured for indicating to surrounding equipment that said associated first electronic equipment is available to receive rerouting, thereby to enable receipt of rerouted data from said surrounding equipment;
>
> a scout device associated with said first electronic equipment, configured for scanning surroundings of said associated first electronic equipment to identify and determine availability of compatible equipment in the vicinity, thereby to reroute data from said mobile equipment to a selected one of said surrounding equipment, wherein said rerouting comprises setting up a bidirectional communication link between said selected one of surrounding equipment and said mobile electronic equipment, said bidirectional link having a first data streaming direction from said mobile equipment to said selected one of said surrounding equipment and a second data streaming direction from said selected one of said surrounding equipment to said mobile equipment, said bidirectional link capable of carrying a datastream in said first direction and in said second direction, and wherein said scout device is operable to determine media type requirements of said compatible equipment;
>
> a media transformer, associated with said scout device, for transforming media into a form that accords with said determined media type requirements; and
>
> a media cloner, associated with said media transformer, for making multiple copies of a single incoming data stream, thereby to enable said apparatus to redirect a single incoming communication, to a plurality of locations, at least some of said multiple copies being redirected via said media transformer.

168. The dependent claims of the ’990 patent recite additional technological solutions. For example, claim 9 recites the “[a]pparatus according to claim 1, further comprising control functionality operable to carry out said rerouting through locally available network infrastructure.”

169. As another example, claim 2 recites the “[a]pparatus according to claim 1, further comprising a user interface associated with said scout device for allowing a user to select between available compatible equipment to reroute data thereto.”

170. As still another example, claim 3 recites the "[a]pparatus according to claim 1, further comprising a user interface associated with said scout device for allowing a user to select between available compatible equipment to reroute data thereto."

171. As yet another example, claim 24 recites the "[a] cellular telephone comprising the apparatus of claim 1."

172. As another example, claim 13 recites the "[a]pparatus according to claim 1, wherein said streaming data is directable via multiple channels to each of a plurality of surrounding devices of said surrounding equipment."

173. As yet another example, claim 22 recites "[t]he method of claim 16 comprising selecting a plurality of devices to reroute said communication thereto, and cloning said communication for each selected device."

The Inventions Claimed In the '990 Patent Were Not Well-Understood, Routine, Or Conventional

174. The inventions claimed in the '990 patent were not well-understood, routine, or conventional as of the priority date of the '990 patent, but instead claim specific, novel, and nonobvious improvements to the prior art.

175. This is evidenced by the foregoing discussion in the '990 patent regarding the technological improvements provided by the claimed inventions.

176. That the inventions recited in the claims of the '990 patent, including the independent claims, were not well-understood, routine, or conventional at the time the '990 patent was filed is also evidenced by the prosecution history of the '990 patent.

177. The Examiner who examined the '990 patent, in accordance with his duties, (1) read and understood the invention set forth in the specification; (2) determined whether the

application was adequate to define the metes and bounds of the claimed invention; (3) determined the scope of the claims; (4) searched existing technology for the inventions recited in the claims of the application; and (5) determined the patentability of the claims.

178. The Examiner performed these duties in his role as "advocate/protector of [the] public interest with respect to intellectual property," which involves a "cooperative investigation between the Examiner and the Applicant, which ensures an Applicant receives a patent only for that which they are entitled to in accordance with Patent laws." Exhibit I at 8-9.

179. After conducting examination of the claims of the application underlying the '990 patent, the Examiner determined that the claims of the '990 patent were allowable over the art of record. *See* Feb. 18, 2011, Notice of Allowance. This evidences that the claims of the '990 patent were not well-understood, routine, or conventional as of the priority date of the '990 patent.

180. The claims of the '990 patent do not preempt all systems and methods for rerouting communication data.

181. The '990 patent is compliant with 35 U.S.C. § 101.

182. The '990 patent is compliant with 35 U.S.C. § 102.

183. The '990 patent is compliant with 35 U.S.C. § 103.

184. The '990 patent is compliant with 35 U.S.C. § 112.

185. The '990 patent is presumed valid and enforceable in accordance with 35 U.S.C. § 282.

186. The significance of the inventiveness of the '990 patent is illustrated by the fact that it or its family members have been cited in 53 other patent applications, including the following patents and published patent applications: US7706785B2; CA2512046A1;

IL160504A0; EP1599026B1; US20050239445A1; US7522549B2; US8908699B2; US20060013254A1; DE102005009082A1; US7500010B2; US11258531B2; US8909807B2; US9065595B2; US8589508B2; US8719399B2; US8135342B1; US20080091804A1; FR2911030B1; US10356195B2; US20080176554A1; RU2011105732A; US20100027966A1; JP2011530137A; JP2012503255A; US9015599B2; US8346233B2; US8320927B2; US8185489B2; US8615575B2; WO2010068497A2; EP2468030B1; US8886790B2; KR101649777B1; US8495196B2; US20120023201A1; US8998076B2; KR101901720B1; US9110963B2; KR101953308B1; US20140221087A1; US9336113B2; KR102257474B1; US10178182B2; US11115326B2; US20220086731A1; US9652196B2; CN107426388B; WO2018125682A1; US10856151B2; US9986394B1; and US10674552B1. These public documents and their related prosecution histories are incorporated herein by reference and provide concrete proof that the inventions claimed and disclosed in the '990 patent were not well-understood, routine, or conventional at the time of the invention.

The Asserted Patents Do Not Merely Codify Known Business Practices or Claim Results

187. As set forth in the Declaration of Oded Shmueli, "The Asserted Patents were not about codifying known business practices, akin to routing phone calls through a switchboard operator to a pre-wired collection of clerks reporting to a manager. Instead, they laid the foundation for a novel ecosystem of multimedia communication. They allowed routing based on the type of multimedia content, empowering users to choose a device (or a plurality of devices) for playback and/or interaction independently of the initial receiving device. The patents allowed rerouting to devices in the vicinity which were not known to the receiving device at the time of receipt. They also disclose changing the format of the content if needed. The Asserted Patents

anticipated the dynamic and flexible ecosystem of electronic devices we know today, more than twenty years after the Asserted Patents' priority date." *See* Exhibit O at ¶ 24.

188. As set forth in the Declaration of Oded Shmueli, "The first iPhone, Apple's first Smartphone, was officially announced in 2007 and the first iPad was announced in 2010. The first iPod, released in late October 2001, was a static music player, playing pre-loaded music files on the same device only and connecting to a Mac computer by cable (FireWire). The first Apple TV, released in 2007, stored content locally and required a connected Mac computer or a Windows-based PC running iTunes. Only in 2010, with the release of AirPlay, was streaming video from iPhones to Apple TV supported." *See* Exhibit O at ¶ 25.

189. As set forth in the Declaration of Oded Shmueli, "The claims of the Asserted Patents do not merely recite functional results. For example, claim 14 of the '223 patent recites a mobile apparatus comprising a receiver, a scouting detector, and a controller. Claim 14 also includes detailed limitations regarding the capability of these components. For example, claim 14 requires that the controller be '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 stream according to said streaming protocol for presentation of said media content by a media player of said selected device.' The claim uses such detailed language to describe the required capability of the recited controller because, at the time the specification was filed, there was not a short label to describe such capability. The same is true for other components, such as the recited scouting detector and the recited receiver." *See* Exhibit O at ¶ 26.

190. As set forth in the Declaration of Oded Shmueli, "Similarly, claim 15 of the '648 patent recites a mobile apparatus comprising a receiver and a controller. Claim 15 also includes

detailed limitations regarding the capability of these components. For example, claim 15 requires that the controller be 'adapted to instruct communicating wirelessly information to an intermediate routing device connected to the LAN for indirectly routing messages or media content to at least one or more of the available devices via said intermediate routing device.' The claim uses such detailed language to describe the required capability of the recited controller because, at the time the specification was filed, there was not a short label to describe such capability. The same is true for the other recited capability of the controller and the receiver." *See* Exhibit O at ¶ 27.

191. As set forth in the Declaration of Oded Shmueli, "Similarly, the method claims of the '223 and '648 patents do not merely recite results-oriented language. Rather, in keeping with the nature of method claims, these claims recite steps. However, those steps do not merely claim the technical benefit (or results) of the inventions disclosed in the specification. Rather, the method claims of the '223 and '648 patents recite steps that, if performed, will result in those technical benefits. They do not merely recite the results themselves." *See* Exhibit O at ¶ 28.

192. For example, claim 1 of the '223 patent recites the following method steps that provide a way to achieve a technical improvement in the state of the art:

> 1. A method of routing media data stream, comprising:
>
> 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;
>
> 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;

> 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;
>
> setting up a wireless communication link with said selected compatible device via said local wireless communication network;
>
> 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.

Exhibit O at ¶ 29.

193. As set forth in the Declaration of Oded Shmueli, "For example, as disclosed in the specification, this claim addresses the following need in the art that existed as of the priority date of the Asserted Patents: 'it would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.' '223 patent at 2:23-28. The inventions claimed in the '223 patent address the deficiencies identified at 1:33-48 and 1:60-67 of the '223 patent." *See* Exhibit O at ¶ 30.

194. As a further example, claim 1 of the '648 patent recites the following method steps that provide a way to achieve a technical improvement in the state of the art:

> 1. A method of informing a device about an availability of media content at a mobile device connected to a local area network (LAN), comprising:
>
> using the mobile device for:
>
> identifying one or more available devices compatible to handle the media content and connected to the LAN;
>
> wirelessly communicating information to an intermediate routing device connected to the LAN for indirectly routing messages or media content to at least one of the one or more available devices via said intermediate routing device; and

> wirelessly signaling the one or more available devices indicating an availability of a media content at the mobile device;
>
> wherein the media content is originated from an external source disconnected from the LAN;
>
> wherein the media content selected from a group consisting of: audio content and video content.

Id. at ¶ 31.

195. As set forth in the Declaration of Oded Shmueli, "For example, as disclosed in the specification, this claim addresses the following need in the art that existed as of the priority date of the Asserted Patents: 'it would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device.' '648 patent at 2:28-33. The inventions claimed in the '648 patent address the deficiencies identified at 1:36-51 and 1:63-2:3 of the '648 patent." *See* Exhibit O at ¶ 32.

196. As set forth in the Declaration of Oded Shmueli, "It would not be accurate to liken the inventions claimed in the Asserted Patents to a manager (Alice) who, while speaking on the phone with a customer, funnels calls from outside her office building to an employee (e.g., Bob) who indicates availability by opening his door and signaling a receptionist to transfer the call to that particular employee (e.g., Bob). There are many notable differences with such an illustration and the inventions claimed in the Asserted Patents, including the following enumerated examples. Likewise, it would not be accurate to liken the inventions claimed in the Asserted Patents to a manager (Alice) who, having received a call from a customer, checks which employees are available (as signified by open doors) and capable of handling the call, then chooses one and uses her office phone to forward the call." *See* Exhibit O at ¶ 33.

197. As set forth in the Declaration of Oded Shmueli, "First, these analogies ignore the context of the asserted claims, which (as discussed above) provide specific improvements to mobile-device technology utilizing wireless links that existed in the art as of the priority date of the Asserted Patents. These analogies oversimply the claims of the Asserted Patents and ignore important structural and technological claim elements for the same reasons discussed above in explaining why the asserted claims do not merely claim results." *See* Exhibit O at ¶ 34.

198. As further set forth in the Declaration of Oded Shmueli, "Second, in these analogies, Alice works in a fixed, charted, well-defined environment. Only known employees can take a call. Not, for example, occasional visiting clients or service providers to the office. Not different types of persons, for example, visiting kids. The asserted claims of the Asserted Patents provide the ability to work in an uncharted environment." *See* Exhibit O at ¶ 35.

199. As further set forth in the Declaration of Oded Shmueli, "Third, Alice answers the call and speaks with the caller as part of the process of deciding to whom to transfer the call. She can't do it without herself interrogating the caller. So, in these analogies, a manager must proactively speak and engage with a caller. In the environment of the asserted claims of the Asserted Patents, including the '648 and '223 patents, no such interrogation is necessary. The whole routing function can instead be, for example, library-driven as described in the specification (e.g., '223 patent at 8:1-8)." *See* Exhibit O at ¶ 36.

200. As further set forth in the Declaration of Oded Shmueli, "Fourth, Alice can only forward a call to one employee, say Bob, at a time, whereas in the environment of the Asserted Patents, streams may be forwarded to multiple recipients (e.g., loudspeakers) and, if necessary, transforming the media into another form. This is particularly relevant, for example, to claim 7

and claim 21 of the '223 patent (as well as the claims of U.S. Patent No. 7,969,990 and U.S. Patent No. 8,711,866)." *See* Exhibit O at ¶ 37.

201. As further set forth in the Declaration of Oded Shmueli, "Fifth, in the claims of the '223 patent, a mobile device is configured to set up a wireless communication link with a selected device via a local wireless communication network. The mobile device is adapted to instruct the routing of a media data stream of media content to the selected device via that wireless communication link. The above-described analogies are different. Alice tells the receptionist to transfer the call to Bob, or uses a forwarding feature on her phone to use the office system to have the system transfer the call to Bob, at which point Alice is out of the loop and the call goes to Bob independently of Alice and her phone. These analogies do not involve routing the call to Bob via any communication link set up between Alice and Bob." *See* Exhibit O at ¶ 38.

202. As further set forth in the Declaration of Oded Shmueli, "Sixth, in the claims of the '223 patent, a mobile device is configured to set up a wireless communication link with a selected device via a local wireless communication network. The mobile device is adapted to instruct the routing of a media data stream of media content to the selected device via that wireless communication link. The originating device, sending the media content to the mobile device, is not aware of this routing. The above-described analogies are different. When Alice tells the receptionist to transfer the call to Bob, the customer ends up talking to Bob, knowing that he is now talking to Bob even though originally he was calling Alice." *See* Exhibit O at ¶ 39.

203. As set forth in the Declaration of Oded Shmueli, "These analogies do not apply to the claims of the '648 patent for similar reasons to those discussed regarding the '223 patent in

the Fifth and Sixth points above. For example, claim 19 of the '648 patent recites a computer program product for a device that includes program instructions executable by a processor to wirelessly communicate information to an intermediate routing device connected to a local area network (LAN) for indirectly receiving messages or media content route from one or more available devices connected to the LAN via the intermediate routing device. Claim 1 of the '648 patent recites 'wirelessly communicating information to an intermediate routing device connected to a LAN for indirectly routing messages or media content to at least one of the more available devices via said intermediate routing device.' Claim 15 includes a similar recitation. Thus, in the claims of the '648 patent, the mobile device indirectly routes messages/media content to the selected device. In contrast, in the 'Alice' analogies, Bob does not receive messages or media content from Alice. Rather, Alice simply communicates with the office phone system to transfer a call to Bob. Bob does not receive the call from Alice. Moreover, Alice certainly cannot message several people at the same time. The office phone system in the above-described analogy cannot transfer the call to more than one person at the same time." *See* Exhibit O at ¶ 40.

204. As set forth in the Declaration of Oded Shmueli, "In essence, the inventions of the Asserted Patents represented a paradigm shift in how electronic devices, including of different types of devices, interacted and communicated. Decision-making based on information in a library (e.g., protocol and device-related data) provided the potential for change and growth, reflecting the dynamism and flexibility of the invented system." *See* Exhibit O at ¶ 41.

The Inventors' Efforts to Communicate with Apple in 2006

205. On or about February 19, 2006, the inventors contacted Steve Jobs by email in an

effort to discuss their technology and then-pending patent applications, sharing with him a presentation providing information about the technology and pending applications. On or about February 20, 2016, the inventors spoke with the assistant to Jon Rubinstein, then an Apple Senior Vice President with responsibility for the iPod. At the instruction of Mr. Rubinstein's assistant, the inventors sent Mr. Rubinstein a presentation regarding their technology and then-pending patent applications via facsimile on February 28, 2016. The inventors suggested to Mr. Rubinstein that they hold a discussion regarding the benefit their technology would provide to Apple. The inventors received an email from Mark Aaker, an Apple employee, on February 22, 2006, indicating that Apple had received the presentation. However, Apple did not respond with any interest in licensing the inventors' intellectual property.

COUNT ONE: INFRINGEMENT OF THE '223 PATENT

206. Plaintiffs reallege and incorporate herein the preceding allegations of this Second Amended Complaint as if fully set forth herein.

207. Defendant has infringed one or more claims of the '223 patent, including at least claims 14-16, 18, 19, and 22, in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, or selling the patented invention within the United States or importing the patented invention into the United States.

208. Representative examples of Defendant's infringing apparatuses, methods, and systems include (but are not limited to) Defendant's iPhone series of smartphones and iPad series of tablets. A representative claim chart demonstrating Defendant's infringement of the '223 patent, either literally or under the doctrine of equivalents, is attached as Exhibit E.

209. Plaintiffs provided Defendant notice of its infringement of the '223 patent by

letter dated March 4, 2021, which was received by Defendant on March 5, 2021, more than two years prior to the filing of the Complaint in this action. Exhibit J. Yet Defendant continued its infringing activity. Defendant's direct infringement after receiving notice of its infringement has been willful.

210. Moreover, as evidenced by the claim chart attached as Exhibit E, Defendant has indirectly infringed at least claims 1, 5, 7-9, 10, 13-16, 18, 19, and 22 of the '223 patent in violation of 35 U.S.C. § 271(b) by actively, knowingly, and intentionally inducing direct infringement by other persons, including customers and end users, by offering for sale and/or selling Defendant's accused products, including its iPhone, iPad, and AppleTV products, in the United States and instructing on their infringing use without authority or license from Plaintiffs and in a manner understood and intended to infringe the '223 patent. As discussed above, Defendant has been on notice of its infringement of the '223 patent since at least March 5, 2021. Defendant's indirect infringement since that date has been willful. Plaintiffs have suffered damages as a direct and proximate result of Defendant's direct and indirect infringement of the '223 patent.

211. Plaintiffs are entitled to: (i) damages adequate to compensate them for Defendant's infringement of the '223 patent, which amounts to, at a minimum, a reasonable royalty and treble damages for willful infringement; (ii) attorneys' fees; and (iii) costs.

COUNT TWO: INFRINGEMENT OF THE '648 PATENT

212. Plaintiffs reallege and incorporate herein the preceding allegations of this Second Amended Complaint as if fully set forth herein.

213. Defendant has infringed one or more claims of the '648 patent, including at least

claims 15, 16, 18, and 19, in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, or selling the patented invention within the United States or importing the patented invention into the United States.

214. Representative examples of Defendant's infringing apparatuses, methods, and systems include (but are not limited to) its Apple iPhone smartphones, iPad series of tablets, and its Apple Watch series of smartwatches. A representative claim chart demonstrating Defendant's infringement of the '648 patent, either literally or under the doctrine of equivalents, is attached as Exhibit F.

215. Plaintiffs provided Defendant notice of its infringement of the '648 patent by letter dated March 4, 2021, which was received by Defendant on March 5, 2021, more than two years prior to the filing of the Complaint in this action. Exhibit J. Yet Defendant continued its infringing activity. Defendant's direct infringement after receiving notice of its infringement was willful.

216. Moreover, as evidenced by the claim chart attached as Exhibit F, Defendant has infringed at least claims 1, 5-8, 10, 11, 13, 15, 16, 18, and 19 of the '648 patent in violation of 35 U.S.C. § 271(b) by actively, knowingly, and intentionally inducing direct infringement by other persons, including customers and end users, by offering for sale and/or selling Defendant's accused products, including Defendant's Apple iPhone smartphones, iPad series of tablets, and its Apple Watch series of smartwatches, in the United States and instructing on their infringing use without authority or license from Plaintiffs and in a manner understood and intended to infringe the '648 patent. As discussed above, Defendant has been on notice of its infringement of the '648 patent since at least March 5, 2021, yet its infringement continued. Defendant's indirect

infringement after receiving notice of its infringement was willful.

217. Plaintiffs have suffered damages as a direct and proximate result of Defendant's direct and indirect infringement of the ’648 patent.

218. Plaintiffs are entitled to: (i) damages adequate to compensate them for Defendant’s infringement of the ’648 patent, which amounts to, at a minimum, a reasonable royalty and treble damages for willful infringement; (ii) attorneys’ fees; and (iii) costs.

COUNT THREE: INFRINGEMENT OF THE ’866 PATENT

219. Plaintiffs reallege and incorporate herein the preceding allegations of this Second Amended Complaint as if fully set forth herein.

220. Defendant has infringed one or more claims of the ’866 patent, including at least claims 22, 23, and 24, in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, or selling the patented invention within the United States or importing the patented invention into the United States.

221. Representative examples of Defendant’s infringing apparatuses, methods, and systems include (but are not limited to) Defendant’s iPhone series of smartphones and its iPad series of tablets. A representative claim chart demonstrating Defendant’s infringement of the ’866 patent, either literally or under the doctrine of equivalents, is attached as Exhibit G.

222. Moreover, Defendant has indirectly infringed at least claims 23 and 24 of the ’866 patent in violation of 35 U.S.C. § 271(b) by actively, knowingly, and intentionally inducing direct infringement by other persons, including customers and end users, by offering for sale and/or selling Defendant’s accused products, including its iPhone series of smartphones, its iPad series of tablets, and its HomePod series of smart speakers, in the United States and instructing

on their infringing use without authority or license from Plaintiffs and in a manner understood and intended to infringe the '866 patent as evidenced by the claim chart attached as Exhibit G.

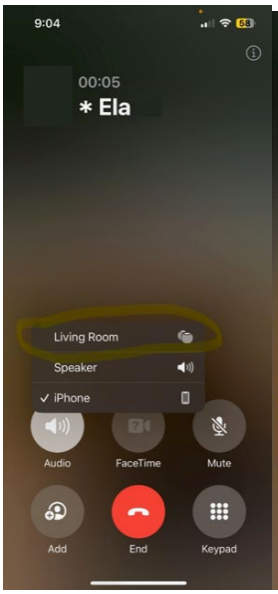
223. Claim 22 of the '866 patent recites, *inter alia*, "thereby to reroute streaming data between said streaming device and a selected one of said surrounding media handling devices, . . . said apparatus configured to set up a bidirectional wireless communication link between said streaming device and a respective one of said media handling devices, said bidirectional link carrying streaming data over either direction as required of said bidirectional link."

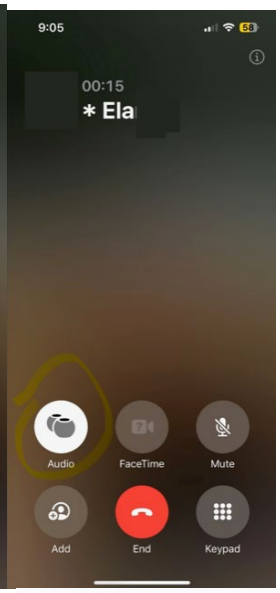
224. As set forth in Exhibit G, Apple iPhones are configured to set up a bidirectional wireless communication link between the iPhone and another media handling devices for carrying streaming data over either direction.

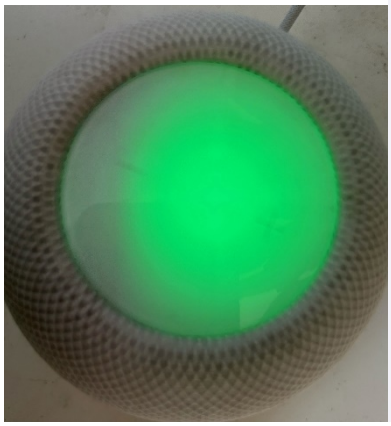
225. For example, an iPhone sets up a bidirectional communication link with selected surrounding equipment (e.g., Mac, iPad, or HomePod).

226. The following screenshots depict the use of an iPhone to reroute a phone call to an Apple HomePod, which on information and belief, utilizes a bidirectional link carrying streaming data over both directions of said first link direction and said second link direction.[1]

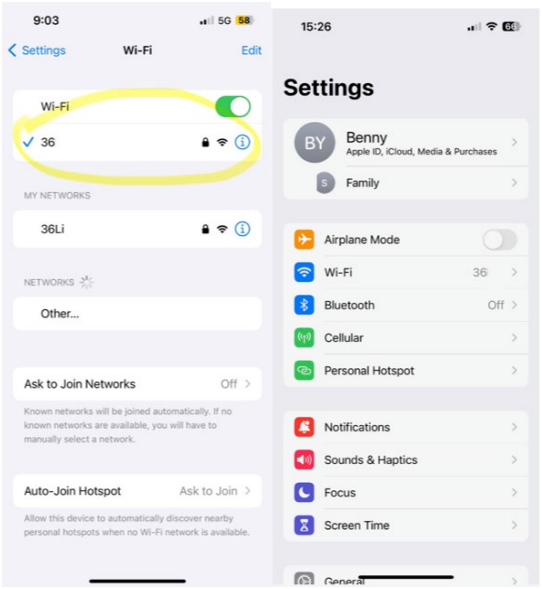
[1] The screenshots included herein have been edited to remove certain identifying information, such as full names and phone numbers, Wi-Fi network names, and user photographs.


9:04
00:05
* Ela
Living Room
Speaker
✓ iPhone
Audio
FaceTime
Mute
Add
End
Keypad

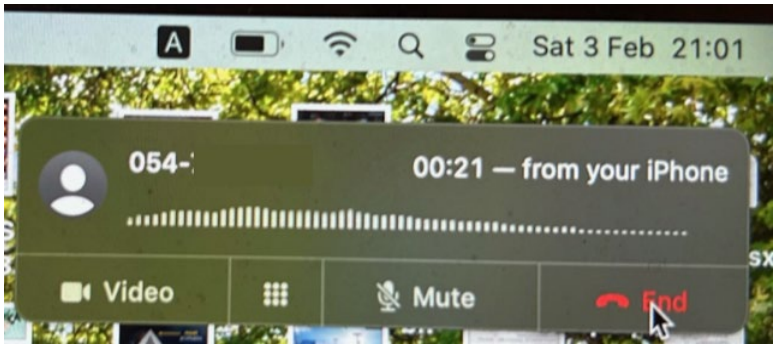

9:05
00:15
* Ela
Audio
FaceTime
Mute
Add
End
Keypad




9:03
5G
Settings
Phone
Share Name and Photo
Off
To personalize your messages, choose your name and photo, and who can see what you share.
CALLS
Wi-Fi Calling
Off
Calls on Other Devices
Off
Respond with Text
Call Forwarding
Call Waiting
Show My Caller ID
Silence Unknown Callers
Off
Blocked Contacts
SMS/Call Reporting
Dial Assist
Dial assist automatically determines the correct



227. The following screenshots depict the use of an iPhone to reroute a phone call to a Mac, which on information and belief, utilizes a bidirectional link carrying streaming data over either direction of said bidirectional link.



228. The functionality shown in the foregoing screenshots is consistent with Apple's instructions regarding the use of its iPhones:

> iPhone Cellular Calls
>
> iPhone Cellular Calls requires any iPhone using iOS 8.1 or later and an activated carrier plan. You can then relay calls to and from that iPhone from these devices:
>
> - Any Mac using OS X Yosemite or later. Mac mini and Mac Pro require an external microphone or headset.
> - Any iPhone, iPad, or iPod touch using iOS 8 or later.

https://support.apple.com/en-us/108046

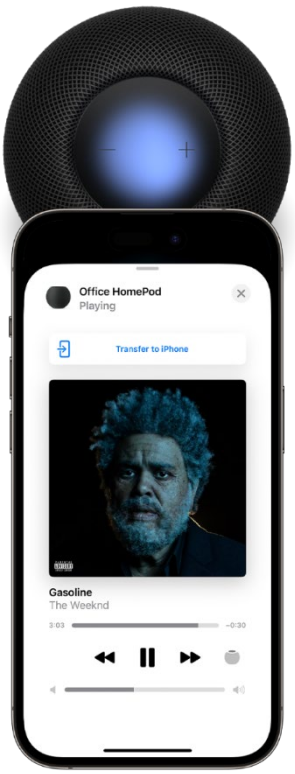
> Make and receive phone calls on Mac or iPad
>
> With the iPhone Cellular Calls feature, you can make and receive phone calls from your Mac or iPad when those devices are on the same network as your iPhone.

https://support.apple.com/en-us/102405

> **Route the audio of an existing call through HomePod**
>
> Do either of the following:

- On your iOS or iPadOS device, tap Audio in the Phone or FaceTime app, then choose your HomePod.
- Hold your iPhone near the top of HomePod.

  To hand off audio, your device must have Bluetooth turned on and be on the same Wi-Fi network as HomePod. You must also turn on Transfer to HomePod in Settings > General > AirPlay & Handoff.



To change who can hand off phone calls to HomePod, see Allow others to control audio on HomePod.

https://support.apple.com/guide/homepod/use-for-phone-calls-apdeaa15a6c3/homepod.

229. Claim 22 also recites "a media transformer, configured to transform media into forms that accord with respective determined media type requirements, wherein there are a plurality of said types." Claim 22 further recites "a media cloner, associated with said media transformer, for making multiple copies of a single incoming data stream, thereby to enable said

apparatus to redirect said single incoming data stream to a plurality of locations, at least some of said multiple copies being transformed via said media transformer."

230. The clause relating to the "media transformer" quoted above does not refer back to the "rerouting" element recited earlier in claim 22, but instead introduces a new claim term, "media," which the media transformer is configured to transform.

231. Similarly, the "media cloner" element does not refer back to the "rerouting" element recited earlier in claim 22, but instead recites "making multiple copies of a ***single incoming data stream***, thereby to enable said apparatus to ***redirect*** said single incoming data stream to a plurality of locations." Thus, the clause relating to the "media cloner" introduces two new terms/phrases ("a single incoming data stream" and "redirect") that show it is not relying on the "rerouting" for antecedent basis or otherwise referring back to it.

232. Thus, claim 22 of the '866 patent does not require that the data rerouted over the bidirectional link must necessarily be the same "incoming data stream" that is cloned.

233. This is consistent with the specification of the '866 patent, which repeatedly discloses that different types of content might be handled differently, and that streams may be unidirectional or bi-directional:

> The present invention relates to routing of data including multimedia between electronic devices, and more particularly but not exclusively to rerouting of incoming communications that may or may not include multimedia to devices other than the initial receiving device. . . . Data may be a package or a stream. Such a stream may be unidirectional, bi-directional, or multidirectional.

'866 patent at 1:16-24; *see also id.* at 5:29-30.

234. The specification also discloses that different types of content may be handled differently: "Nevertheless, it would be highly advantageous to provide the user with the ability to

select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device." '866 patent at 2:20-25.

235. In particular, the specification describes that some data would be routed without transformation or cloning, while in other cases it would be transformed and/or cloned:

> As will be explained in detail below, one or more destinations for the data as well as media type transformations are selected. In the case of straightforward rerouting of the media to another device, the content is sent directly to outgoing multi-media transmitter **22** for simple media routing to a similar content type device. In other circumstances, transforming from one media to another may be required prior to rerouting. In such a case, content is directed to media transformer **24** prior to rerouting, where transforming is carried out. The transformed content is then directed to the outgoing multi-media transmitter **22** as before. Content is directed to media cloner **26** in cases where it is intended to route the content to more than one device, or if for any reason it is intended to send multiple copies to the same device. From the media cloner the content may then be sent directly to the outgoing multi-media transmitter **22** for direct output, or one or more of the copies may be sent to the media transformer for transformation prior to output.

'866 patent at 6:63-7:14.

236. In another passage, the patent again discloses that different content may be handled differently, including that some content might be routed without transforming or cloning, while other content might sometimes be transformed and/or cloned:

> There are many ways to exploit the capability to route different content (media) types between different devices. Using only rerouting, one may route one form of content (for example audio) only to devices that handle audio (for example, routing an audio stream to nearby speakers). Using rerouting combined with a media type transformation capability, one may route content transformed specifically for a receiving device. . . . Finally, cloning allows the same content to be sent to several devices, and combinations of different transformations for different devices may allow additional dimensions to incoming multi-media. Thus, for example an incoming signal comprising music and voice could be cloned.

’866 patent at 9:39-54.

237. Apple iPhones provide the recited media transformer and media cloner as set forth in Exhibit G.

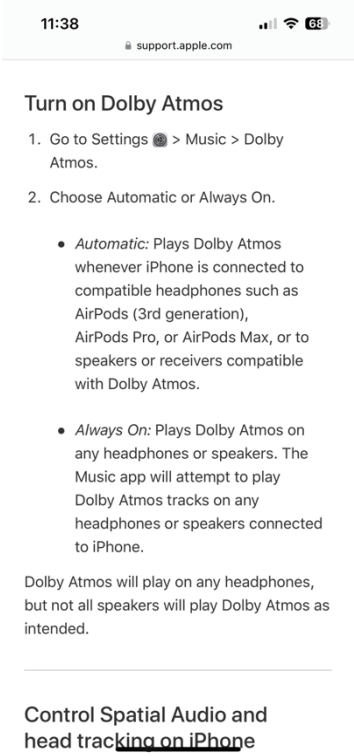
238. For example, Apple iPhones comprise a media transformer, associated with said scout device, for transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer.

239. For example, as evidenced below, an audio stream routed to compatible devices (e.g., Apple TV, Apple HomePod smart speaker, or other Airplay-compatible speakers) via AirPlay can be transformed to a format compatible with the destination device.

> . . .with regards to using AirPlay 2 to send lossless Apple Music streams. Apple Music’s Lossless streams supposedly convert from ALAC (Apple’s lossless codec) into AAC (Apple’s lossy codec) at a pretty lowly 256kbps when transmitted over AirPlay – and therefore *not* losslessly.

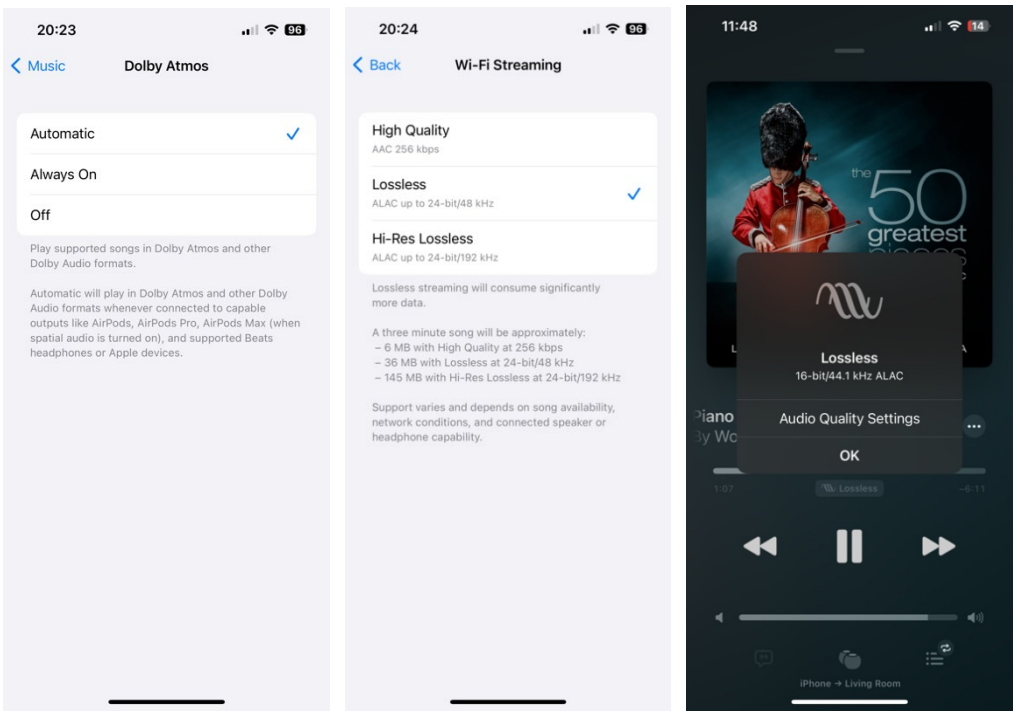
https://www.whathifi.com/advice/apple-airplay-2-everything-you-need-to-know

240. When an Apple iPhone streams the audio to the compatible devices (e.g., Apple TV, Apple HomePod smart speaker and other Airplay-compatible speakers) via AirPlay, it converts the audio format to AAC. As can be seen in the below screen capture from an iPhone, the iPhone further plays Dolby Atmos format on specific compatible speakers. The Apple device provides a user interface allowing a user to select Dolby Atmos.



241. The following links provide information on different formats supported by AirPlay: https://developer.apple.com/documentation/avfaudio/avaudioformat; https://developer.apple.com/documentation/avfoundation/streaming_and_airplay/supporting_airplay_in_your_app.

242. The following iPhone screenshots show a user interface allowing a user to select media type for transforming the media data.



243. Apple iPhones also include the recited media cloner. For example, an Apple iPhone is capable of streaming a single audio stream to one or more compatible devices (e.g., Apple TV, Apple HomePod smart speaker, or other Airplay-compatible speakers) connected to the same network via AirPlay.

> Play audio on multiple AirPlay 2-enabled devices:
>
> With AirPlay 2 and iPhone, you can play audio on multiple AirPlay 2-enabled devices connected to the same Wi-Fi network. For example, you can play a party playlist on HomePod speakers in the living room and kitchen, on an Apple TV in the bedroom, and on an AirPlay 2-enabled smart TV in the den.

https://support.apple.com/en-il/guide/iphone/iph315e0d58d/ios

> As long as all the devices are on the same wi-fi network (remember, AirPlay requires a wi-fi connection to work), you simply have to access the music controls on, say, your iPhone, iPad or Apple TV, and select a connected speaker (or more than one) to send the music to.

https://www.whathifi.com/advice/apple-airplay-2-everything-you-need-to-know

244. The specification supports both types of rerouting and redirecting cited in Plaintiffs' charts. As it relates to rerouting over a bidirectional link, the specification specifically discloses that "telephone communication is a bi-directional type of communication, and any rerouting should preferably support a return path for the communication." '866 patent at 5:65-67. This aligns with the evidence cited in the claim charts for the claim elements relating to streaming data over both directions of a bidirectional link.

245. As it relates to transforming and cloning an incoming data stream, the specification specifically discloses that music is one type of data that could be cloned: "an incoming signal comprising music and voice could be cloned." '866 patent at 9:53-54. In contrast to the above-referenced discussion of a telephone communication, the specification does not indicate that a return path need be supported in the case of music. As noted above, the specification specifically discloses that some redirection may be unidirectional. '866 patent at 1:16-24, 5:29-30. This aligns with the evidence cited in the claim charts for the media transformer and media cloner elements.

246. The specification also expressly states that features disclosed in separate

embodiments may be combined in a single embodiment:

> It is appreciated that certain features of the invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable subcombination.

'866 patent at 12:12-18. This further supports Plaintiffs' infringement allegations of claim 22 of the '866 patent as set forth in Exhibit G.

247. Plaintiffs have suffered damages as a direct and proximate result of Defendant's direct and indirect infringement of the '866 patent.

248. Plaintiffs are entitled to: (i) damages adequate to compensate them for Defendant's infringement of the '866 patent, which amounts to, at a minimum, a reasonable royalty; (ii) attorneys' fees; and (iii) costs.

COUNT FOUR: INFRINGEMENT OF THE '990 PATENT

249. Plaintiffs reallege and incorporate herein the preceding allegations of this Second Amended Complaint as if fully set forth herein.

250. Defendant has in the past and continues to infringe one or more claims of the '990 patent, including at least independent claim 1-3, 9, and 24, in violation of 35 U.S.C. § 271(a) by making, using, offering to sell, or selling the patented invention within the United States or importing the patented invention into the United States.

251. Representative examples of Defendant's infringing apparatuses, methods, and systems include (but are not limited to) Defendant's iPhone series of smartphones. A representative claim chart demonstrating Defendant's infringement of the '990 patent, either literally or under the doctrine of equivalents, is attached as Exhibit H.

252. Moreover, Defendant has indirectly infringed at least claims 1-3, 9, and 24 of the '990 patent in violation of 35 U.S.C. § 271(b) by actively, knowingly, and intentionally inducing direct infringement by other persons, including customers and end users, by offering for sale and/or selling Defendant's accused products, including Defendant's iPhone series of smartphones and its HomePod series of smart speakers, in the United States and instructing on their infringing use without authority or license from Plaintiffs and in a manner understood and intended to infringe the '990 patent as evidenced by the claim chart attached as Exhibit H.

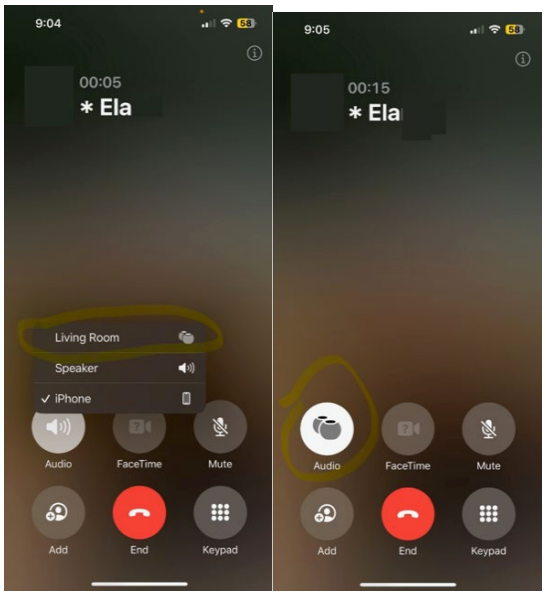
253. Claim 1 of the '990 patent recites, *inter alia*, "thereby to reroute data from said mobile communication device to a selected one of said surrounding equipment, wherein said rerouting comprises setting up a bidirectional communication link between said mobile communication device and said selected surrounding equipment, said bidirectional link having a first link direction from said mobile communication device to said selected surrounding equipment and a second link direction from said selected surrounding equipment to said mobile communication device, said bidirectional link carrying streaming data over both directions of said first link direction and said second link direction, and wherein said scout device is operable to determine media type requirements of said compatible equipment."

254. As set forth in Exhibit H, Apple iPhones are equipped to reroute data from said mobile communication device to a selected one of said surrounding equipment, wherein said rerouting comprises setting up a bidirectional communication link between said mobile communication device and said selected surrounding equipment, said bidirectional link having a first link direction from said mobile communication device to said selected surrounding equipment and a second link direction from said selected surrounding equipment to said mobile

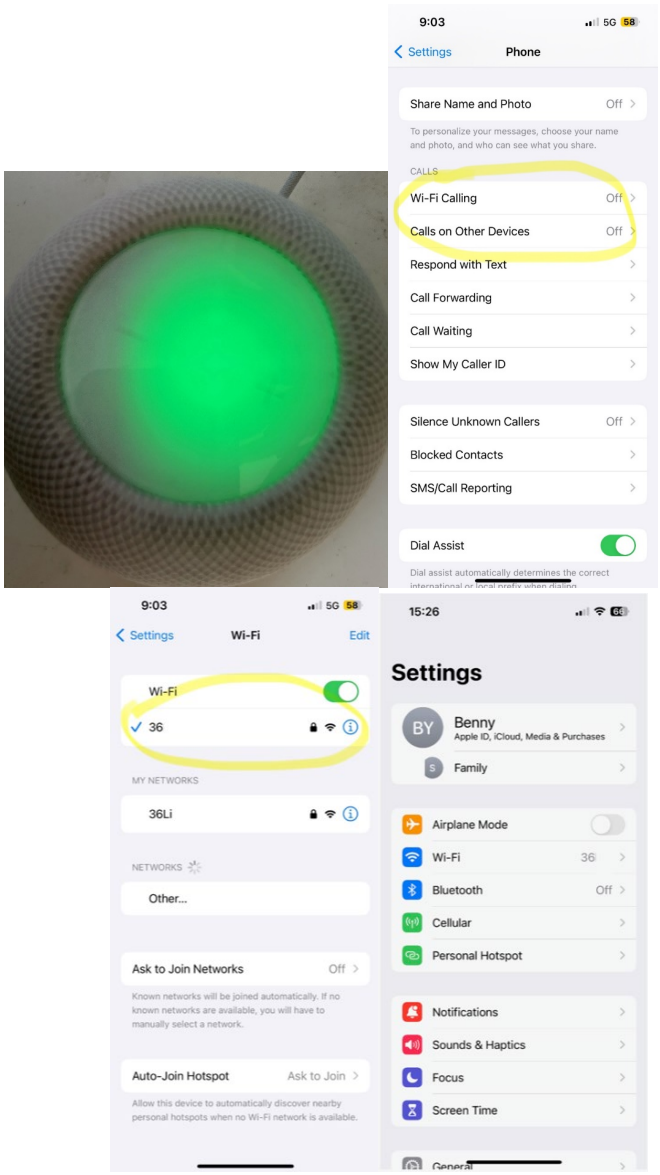
communication device, said bidirectional link carrying streaming data over both directions of said first link direction and said second link direction, and wherein said scout device is operable to determine media type requirements of said compatible equipment.

255. For example, an Apple iPhone sets up a bidirectional communication link with selected surrounding equipment (e.g., Mac, iPad, or HomePod).

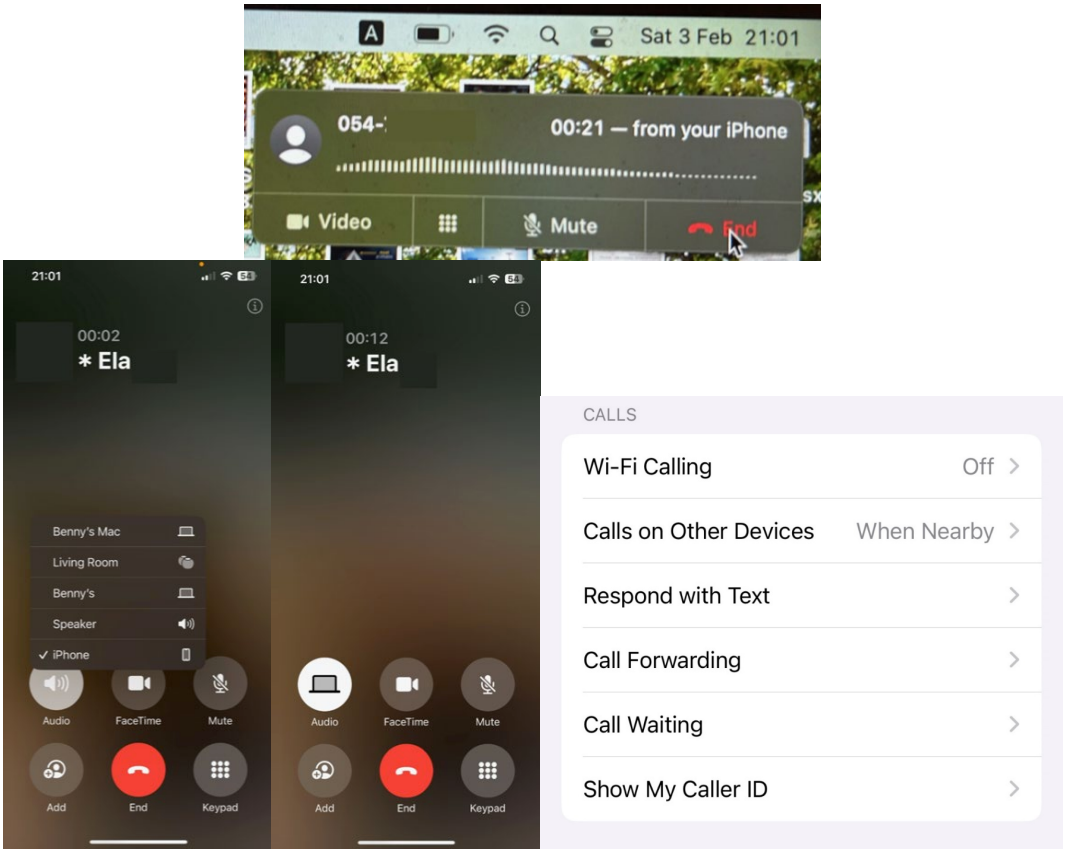
256. The following screenshots depict the use of an iPhone to reroute a phone call to an Apple HomePod, which on information and belief utilizes a bidirectional link carrying streaming data over both directions of said first link direction and said second link direction.[2]



[2] The screenshots included herein have been edited to remove certain identifying information, such as full names and phone numbers, Wi-Fi network names, and user photographs.



257. The following screenshots depict the use of an iPhone to reroute a phone call to a Mac, which on information and belief utilizes a bidirectional link carrying streaming data over both directions of said first link direction and said second link direction.



258. The functionality shown in the foregoing screenshots is consistent with Apple's instructions regarding the use of its iPhones:

> iPhone Cellular Calls
>
> iPhone Cellular Calls requires any iPhone using iOS 8.1 or later and an activated carrier plan. You can then relay calls to and from that iPhone from these devices:
>
> - Any Mac using OS X Yosemite or later. Mac mini and Mac Pro require an external microphone or headset.
> - Any iPhone, iPad, or iPod touch using iOS 8 or later.

https://support.apple.com/en-us/108046

> Make and receive phone calls on Mac or iPad
>
> With the iPhone Cellular Calls feature, you can make and receive phone calls from your Mac or iPad when those devices are on the same network as your iPhone.

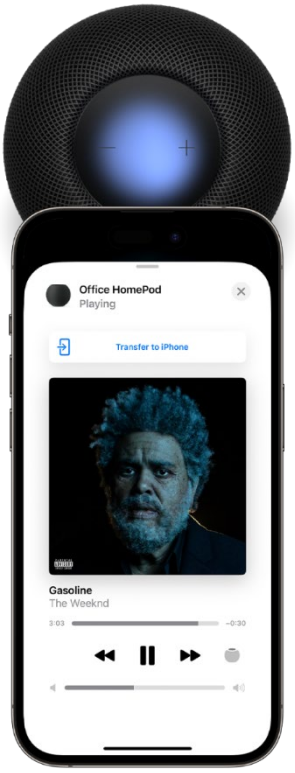
https://support.apple.com/en-us/102405

Route the audio of an existing call through HomePod

Do either of the following:

- On your iOS or iPadOS device, tap Audio in the Phone or FaceTime app, then choose your HomePod.
- Hold your iPhone near the top of HomePod.

  To hand off audio, your device must have Bluetooth turned on and be on the same Wi-Fi network as HomePod. You must also turn on Transfer to HomePod in Settings > General > AirPlay & Handoff.



To change who can hand off phone calls to HomePod, see Allow others to control audio on HomePod.

https://support.apple.com/guide/homepod/use-for-phone-calls-apdeaa15a6c3/homepod.

259. Claim 1 also recites "a media transformer, associated with said scout device, for

transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer." Claim 1 further recites "a media cloner, associated with said media transformer, for making multiple copies of a single incoming data stream, thereby to enable said apparatus to redirect said single incoming data stream to a plurality of locations, at least some of said multiple copies being redirected via said media transformer."

260. The clause relating to the "media transformer" quoted above does not refer back to the "rerouting" element recited earlier in claim 1, but instead introduces a new claim term, "media," which the media transformer is capable of transforming.

261. Similarly, the "media cloner" element does not refer back to the "rerouting" element recited earlier in claim 1, but instead recites "making multiple copies of a ***single incoming data stream***, thereby to enable said apparatus to ***redirect*** said single incoming data stream to a plurality of locations." Thus, the clause relating to the "media cloner" introduces two new terms/phrases ("a single incoming data stream" and "redirect") that show it is not relying on the "rerouting" for antecedent basis or otherwise referring back to it.

262. Thus, claim 1 of the '990 patent does not require that the data rerouted over the bidirectional link must necessarily be the same "incoming data stream" that is cloned.

263. This is consistent with the specification of the '990 patent, which repeatedly discloses that different types of content might be handled differently, and that streams may be unidirectional or bi-directional:

> The present invention relates to routing of data including multimedia between electronic devices, and more particularly but not exclusively to rerouting of

> incoming communications that may or may not include multimedia to devices other than the initial receiving device. . . . Data may be a package or a stream. Such a stream may be unidirectional, bi-directional, or multidirectional.

'990 patent at 1:15-22; *see also id.* at 5:24-25.

264. The specification again discloses elsewhere that different types of content may be handled differently: "Nevertheless, it would be highly advantageous to provide the user with the ability to select a target device, based on the type of multimedia content, and furthermore to choose a device for play or storage of the content independently of the initially targeted or originating device." '990 patent at 2:17-22.

265. In particular, the specification describes that some data would be routed without transformation or cloning, while in other cases it would be transformed and/or cloned:

> As will be explained in detail below, one or more destinations for the data as well as media type transformations are selected. In the case of straightforward rerouting of the media to another device, the content is sent directly to outgoing multi-media transmitter **22** for simple media routing to a similar content type device. In other circumstances, transforming from one media to another may be required prior to rerouting. In such a case, content is directed to media transformer **24** prior to rerouting, where transforming is carried out. The transformed content is then directed to the outgoing multi-media transmitter **22** as before. Content is directed to media cloner **26** in cases where it is intended to route the content to more than one device, or if for any reason it is intended to send multiple copies to the same device. From the media cloner the content may then be sent directly to the outgoing multi-media transmitter **22** for direct output, or one or more of the copies may be sent to the media transformer for transformation prior to output.

'990 patent at 6:57-7:9.

266. In another passage, the patent again discloses that different content may be handled differently, including that some content might be routed without transforming or cloning, and that other content might sometimes be transformed and/or cloned:

> There are many ways to exploit the capability to route different content (media)

> types between different devices. Using only rerouting, one may route one form of content (for example audio) only to devices that handle audio (for example, routing an audio stream to nearby speakers). Using rerouting combined with a media type transformation capability, one may route content transformed specifically for a receiving device. . . . Finally, cloning allows the same content to be sent to several devices, and combinations of different transformations for different devices may allow additional dimensions to incoming multi-media. Thus, for example an incoming signal comprising music and voice could be cloned.

'990 patent at 9:30-45.

267. Apple iPhones provide the recited media transformer and media cloner as set forth in Exhibit H.

268. For example, Apple iPhones comprise a media transformer, associated with said scout device, for transforming media into a form that accords with said determined media type requirements, wherein a plurality of types correspond to said media type requirements, and further comprising a user interface for allowing a user to select one of said media type requirements for transforming at said media transformer.

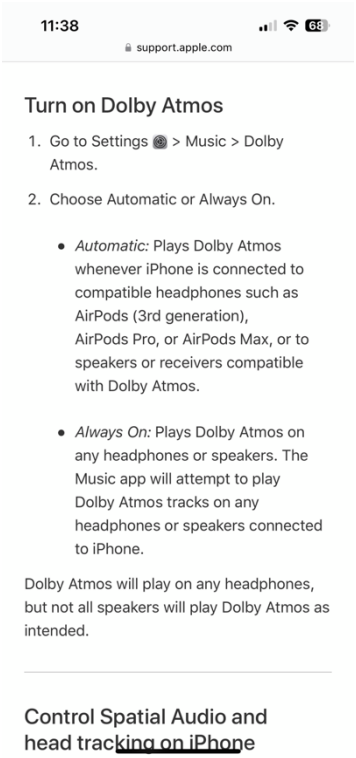
269. For example, as evidenced below, an audio stream routed to compatible devices (e.g., Apple TV, Apple HomePod smart speaker, or other Airplay-compatible speakers) via AirPlay can be transformed to a format compatible with the destination device.

> . . .with regards to using AirPlay 2 to send lossless Apple Music streams. Apple Music's Lossless streams supposedly convert from ALAC (Apple's lossless codec) into AAC (Apple's lossy codec) at a pretty lowly 256kbps when transmitted over AirPlay – and therefore *not* losslessly.

https://www.whathifi.com/advice/apple-airplay-2-everything-you-need-to-know

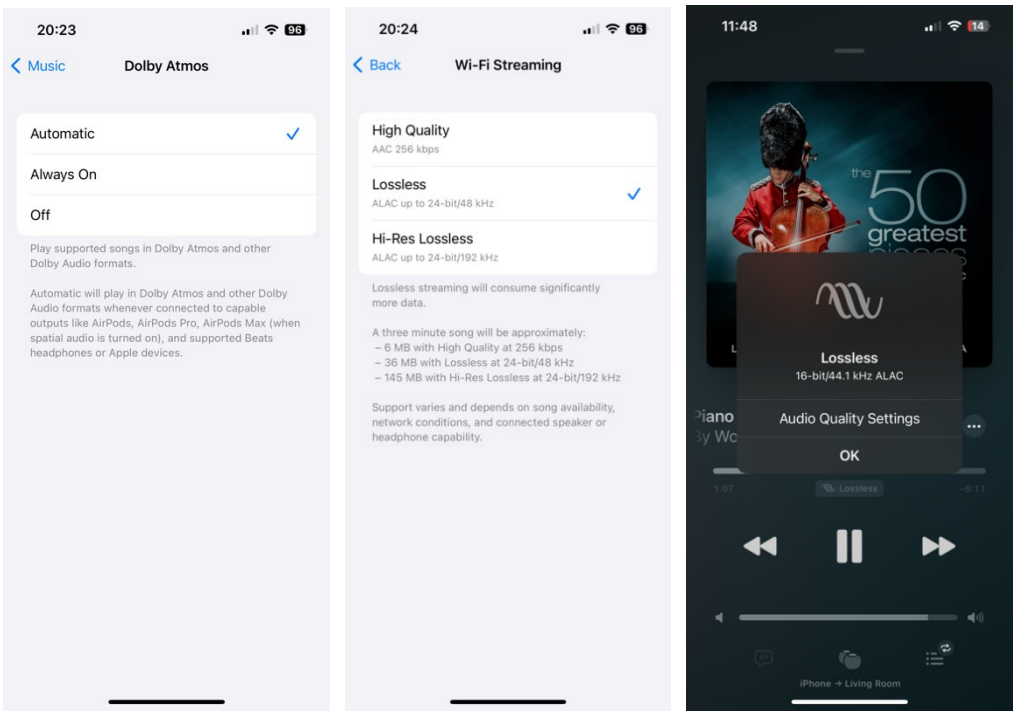
270. When an Apple iPhone streams the audio to the compatible devices (e.g., Apple TV, Apple HomePod smart speaker and other Airplay-compatible speakers) via AirPlay, it converts the audio format to AAC. As can be seen in the below screen capture from an iPhone,

the iPhone further plays Dolby Atmos format on specific compatible speakers. The Apple device provides a user interface allowing a user to select Dolby Atmos.



271. The following links provide information on different formats supported by AirPlay: https://developer.apple.com/documentation/avfaudio/avaudioformat; https://developer.apple.com/documentation/avfoundation/streaming_and_airplay/supporting_airplay_in_your_app.

272. The following iPhone screenshots show a user interface allowing a user to select media type for transforming the media data.



273. Apple iPhones also include the recited media cloner. For example, an Apple iPhone is capable of streaming a single audio stream to one or more compatible devices (e.g., Apple TV, Apple HomePod smart speaker, or other Airplay-compatible speakers) connected to the same network via AirPlay.

> Play audio on multiple AirPlay 2-enabled devices:
>
> With AirPlay 2 and iPhone, you can play audio on multiple AirPlay 2-enabled devices connected to the same Wi-Fi network. For example, you can play a party playlist on HomePod speakers in the living room and kitchen, on an Apple TV in the bedroom, and on an AirPlay 2-enabled smart TV in the den.

https://support.apple.com/en-il/guide/iphone/iph315e0d58d/ios

> As long as all the devices are on the same wi-fi network (remember, AirPlay requires a wi-fi connection to work), you simply have to access the music controls on, say, your iPhone, iPad or Apple TV, and select a connected speaker (or more than one) to send the music to.

https://www.whathifi.com/advice/apple-airplay-2-everything-you-need-to-know

274. The specification supports both types of rerouting and redirecting cited in Plaintiffs' charts. As it relates to rerouting over a bidirectional link, the specification specifically discloses that "telephone communication is a bi-directional type of communication, and any rerouting should preferably support a return path for the communication." '990 patent at 5:58-61. This aligns with the evidence cited in the claim charts for the claim elements relating to streaming data over both directions of a bidirectional link.

275. As it relates to transforming and cloning an incoming data stream, the specification specifically discloses that music is one type of data that could be cloned: "an incoming signal comprising music and voice could be cloned." '990 patent at 9:43-45. In contrast to the above-referenced discussion of a telephone communication, the specification does not indicate that a return path need be supported in the case of music. As noted above, the specification specifically discloses that some redirection may be unidirectional. '990 patent at 1:21-22, 5:24-25. This aligns with the evidence cited in the claim charts for the media transformer and media cloner elements.

276. The specification also expressly states that features disclosed in separate

embodiments may be combined in a single embodiment:

> It is appreciated that certain features of the invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable subcombination.

'990 patent at 12:3-9. This further supports Plaintiffs' infringement allegations of claim 1 of the '990 patent as set forth in Exhibit H.

277. Plaintiffs have and continue to suffer damages as a direct and proximate result of Defendant's direct and indirect infringement of the '990 patent.

278. Plaintiffs are entitled to: (i) damages adequate to compensate them for Defendant's infringement of the '990 patent, which amounts to, at a minimum, a reasonable royalty; (ii) attorneys' fees; and (iii) costs.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs seek the following relief:

a. Declaring that Defendant has infringed the '223 patent, the '648 patent, the '866 patent, and the '990 patent;

b. That Defendant's infringement of the '223 patent and the '648 patent has been willful;

c. That Defendant be ordered to pay damages adequate to compensate Plaintiffs for its infringement of the '223 patent, the '648 patent, the '866 patent, and the '990 patent pursuant to 35 U.S.C. § 284, and that such damages regarding the '223 patent and the '648 patent be enhanced for willful infringement;

d. That Defendant be ordered to pay prejudgment interest pursuant to 35 U.S.C. §

284;

e. That Defendant be ordered to pay all costs associated with this action pursuant to 35 U.S.C. § 284;

f. That Defendant be ordered to pay Plaintiffs' attorneys' fees pursuant to 35 U.S.C. § 285; and

g. That Plaintiffs be granted such other and additional relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38(b), Plaintiffs demand a trial by jury of all issues so triable.

This 31st day of May, 2024.

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