

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

SONOS, INC.,
Patent Owner.

Case No. IPR2025-01213
U.S. Patent No. 10,541,883

DECLARATION OF STUART J. LIPOFF

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I. INTRODUCTION

1. I have been retained by Google LLC (“Petitioner”) as an independent expert consultant in this proceeding before the Patent Trial and Appeal Board of the United States Patent and Trademark Office.

2. I am over 18 years of age and, if I am called upon to do so, I would be willing and able to testify as to the matters set forth herein.

3. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of any related proceeding.

4. I understand that this proceeding involves U.S. Patent No. 10,541,883 (“the ’883 patent,” EX1001). The application for the ’883 patent was filed March 11, 2019, as U.S. Patent Application No. 16/298,515.

5. I have been asked by Petitioner to provide my opinion on whether the claims of the ’883 patent would have been obvious to a person of ordinary skill in the art (“POSITA”) at the time of the earliest claimed priority date of the ’883 patent. In performing my analysis, I have been asked to assume that the priority date is June 5, 2004, the date of Provisional Application 60/577,284, to which the ’883 patent claims priority. My opinions are set forth below.

6. Throughout this declaration, I refer to specific pages, figures, or line numbers of various exhibits. These citations are illustrative and are not intended to suggest that they are the only support for the propositions for which they are cited.

II. SUMMARY OF OPINIONS

7. This declaration considers claims 1-20 of the '883 patent. Below, I set forth the opinions I have formed, the conclusions I have reached, and the bases for these opinions and conclusions. I believe the statements contained in this declaration to be true and correct to the best of my knowledge.

8. Based on my experience and knowledge of the art at the time of the earliest claimed priority date of June 5, 2004, it is my opinion that claims 1-20 of the '883 patent would have been obvious based on the asserted grounds discussed below. A POSITA would have found it obvious to combine the prior art references that I cite and would have been motivated to do so before the priority date.

III. QUALIFICATIONS AND BACKGROUND

9. I believe that I am well qualified to serve as a technical expert in this matter based upon my qualifications, discussed in detail below.

10. I am currently president of IP Action Partners Inc., a consulting practice that serves the telecommunications, information technology, media, electronics, and e-business industries.

11. I earned a Bachelor of Science degree in Electrical Engineering in 1968 and a second Bachelor of Science degree in Engineering Physics in 1969, both from Lehigh University. I earned a Master of Science degree in Electrical Engineering from Northeastern University in 1974, and then a Master of Business Administration degree from Suffolk University in 1983.

12. I hold a Federal Communications Commission (“FCC”) General Radiotelephone License. I also hold a Certificate in Data Processing from the Institute for the Certification of Computing Professionals (“ICCP”), which is supported by the Association for Computing Machinery (“ACM”).

13. I am also a registered professional engineer (PE) in the Commonwealth of Massachusetts and in the State of Nevada.

14. I am a fellow of the Institute of Electrical and Electronics Engineers (“IEEE”) Consumer Electronics, Communications, Computer, Circuits, and Vehicular Technology Groups. I have been a member of the IEEE Consumer Electronics Society National Board of Governors (formerly known as the Administrative Committee) since 1981, and I was Boston Chapter Chairman of the IEEE Vehicular Technology Society from 1974 to 1976. I served as the 1996-1997 President of the IEEE Consumer Electronics Society, and from 1999 to 2018, I served as Chairman of the Society’s Technical Activities and Standards Committee and as Vice President of Publications for the Society. From 2018 to 2023, I served

as Vice President of Standards and Industry Activities for the Society and currently serve on the Board of Governors as The Historian for The Society. I have also served as an Ibuka Award committee member for the IEEE's Award in the field of consumer electronics.

15. I have prepared and presented numerous papers at the IEEE and at other professional meetings. For example, in fall 2000, I served as general program chair for IEEE's Vehicular Technology Conference on advanced wireless communication technology. I have organized sessions at The International Conference on Consumer Electronics, and I was the 1984 program chairman. I conducted an eight-week IEEE-sponsored short course on Fiber Optics System Design. I received IEEE's Centennial Medal in 1984, and I received IEEE's Millennium Medal in 2000.

16. As Vice President and Standards Group Chairman for the Association of Computer Users ("ACU") from 1980 to 1983, I served as the ACU representative to the ANSI X3 Standards Group. From 1976 to 1978, I served as Chairman of the task group on user rule compliance for the FCC's Citizens Advisory Committee on Citizen's Band Radio.

17. Over the last 25 years, I have been a member of the Society of Cable Television Engineers, the Association for Computing Machinery, and The Society of Motion Picture and Television Engineers. From 2001 to 2004, I served as a

member of the USA advisory board to the National Science Museum of Israel. In 1998, I presented a short course on international product development strategies as a faculty member for Technion Institute of Management in Israel. From 2001 to 2003, I served as a member of the board or directors of The Massachusetts Future Problem Solving Program.

18. I am a named inventor on seven United States patents and have several publications on data communications in publications, including Electronics Design, Microwaves, EDN, the Proceedings of the Frequency Control Symposium, Optical Spectra, and IEEE publications.

19. During my professional career dating from 1969 to the present, I have been heavily engaged in the study, analysis, evaluation, design, and implementation of products and technology associated with consumer electronics and electronic appliances. A particular focus of my professional activities has been wireless applications including home networking and public network cellular systems. I also have extensive experience in studying foundation technologies and the applications supporting speech signal processing.

20. For approximately four years, from 1972 to 1976, I served as Section Manager for Bell & Howell Communications Company, where I also had project design responsibilities for paging and wireless communication products. The

projects I supported included networks of devices supporting multimedia digital information distribution.

21. For 25 years from 1976 to 2001, I worked for Arthur D. Little, Inc. (ADL), where I became the Vice President and Director of Communications, Information Technology, and Electronics (CIE) and served in that role for 10 years, from 1991 to 2001. At ADL, I was responsible for the firm's global CIE practice in laboratory-based contract engineering, product development, and technology-based consulting. I was also involved in multiple pioneering efforts to identify and explore customer-to-business (C2B) and business-to-business (B2B) electronic commerce and transactions information processing opportunities ("e-commerce"). These projects involved technology assessment and analysis, as well as developing architectures and systems to support multiple applications. Additionally, these projects typically involved an information retrieval component.

22. While at ADL, I worked on several projects involving supporting home networking of consumer electronic entertainment devices supporting cable TV, high speed internet access, and audio/video systems. During this time, I was retained by a consortium of cable TV operators to lead a multiyear Next Generation Next Architecture (NGNA) project. A major focus of NGNA was to support home networks of TV set-top-boxes, in-home multimedia servers, and home computer systems employing both wired and wireless networking.

23. Another major effort that I managed on behalf of another large consortium of cable industry stakeholders including CableLabs was the development of the DOCSIS series of cable modem standards that have since been adopted as international standards. This DOCSIS effort included consideration of interfacing connections between the home and the public internet supporting entertainment, computing, and telephony networks within the home.

24. Other projects that I worked on at various points in my 25 years at ADL and afterwards work for The National Association of Broadcasters (NAB) to develop applications for digital TV transmission standards providing services to the home as well as several projects for CableLabs and individual cable operators seeking to develop technology supporting multimedia entertainment and information services in the home. I also have extensive experience in digital telecommunications for public/private and wired/wireless networks from my time with Motorola, Bell & Howell, ADL, and while self-employed. In the course of these telecommunications projects ranging from 1969 to the present.

25. My curriculum vitae are provided as Exhibit 1004.

IV. MATERIALS CONSIDERED

26. In forming my opinions, I have reviewed the following documents, as well as other documents cited throughout this declaration:

Exhibit	Description
1001	U.S. Patent No. 10,541,883 B2 to Millington et al. (“the ’883 patent”)
1002	Prosecution History of U.S. Patent No. 10,541,883
1005	U.S. Patent No. 7,532,862 B2 to Cheshire (“Cheshire”)
1006	U.S. Patent No. 7,313,384 B1 to Meenan et al. (“Meenan”)
1007	U.S. Patent Application Publication No. US 2002/0174243 A1 to Spurgat et al. (“Spurgat”)
1008	U.S. Patent No. 10,439,896 B2 to Millington et al.
1009	<i>Certain Audio Players and Controllers, Components Thereof, and Products Containing Same</i> , Inv. No. 337-TA-1191, Order 20: Construing the Terms of the Asserted Claims of the Patents at Issue (ITC Sept. 25, 2020)
1010	U.S. Patent Application Publication No. 2003/0083024 A1 to Richenstein et al. (“Richenstein”)
1011	U.S. Patent No. 5,386,552 to Garney
1012	U.S. Patent No. 6,642,852 B2 to Dresti et al.
1013	U.S. Patent Application Publication No. US 2004/0168081 A1 to Ladas et al. (“Ladas”)
1014	Intentionally left blank
1015	International Publication No. WO 03/093950 A2 to Goldberg et al.
1016	U.S. Patent Application Publication No. US 2003/0187985 A1 to Rohling et al.
1017	Rich Warren, “Remote Controls,” <i>Stereo Review</i> , (June 1991)
1018	U.S. Patent No. 6,489,986 B1 to Allen
1019	U.S. Patent No. 5,182,552 to Paynting

Exhibit	Description
1020	U.S. Patent Application Publication No. US 2002/0072816 A1 to Shdema et al. (“Shdema”)
1021	U.S. Patent Application Publication No. US 2003/0212802 A1 to Rector et al. (“Rector”)

27. I have also relied on my education, experience, research, training, and knowledge in the relevant art, and my understanding of legal principles described in this declaration.

28. All of the opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my understanding of how a POSITA would have understood the claims of the '883 patent at the time of the earliest claimed priority date.

29. I reserve the right to supplement and amend any of my opinions in this declaration based on documents, testimony, and other information that becomes available to me after the date of this declaration.

V. LEGAL STANDARDS

30. I am an engineer and not a lawyer. My understanding of the legal standards to apply in reaching the conclusions in this declaration is based on discussions with counsel for Petitioner, my experience applying similar standards

in other patent-related matters, and my reading of the documents submitted in this proceeding. I have applied these legal standards in preparing this declaration.

31. I have been informed that there are two ways in which prior art may render a patent claim unpatentable. First, I have been informed that the prior art can “anticipate” a claim. Second, I have been informed that the prior art can render a claim “obvious” to a POSITA. I understand that a claim is patentable if it was not anticipated and would not have been rendered obvious by the prior art at the effective filing date of the patent.

32. I have been informed that a dependent claim is a patent claim that refers back to another patent claim. I have been informed that a dependent claim includes all of the limitations of the claim to which it refers plus its own limitation(s).

33. I have been asked to provide my opinions as to whether the cited prior art discloses or renders obvious claims 1-20 of the '883 patent from the perspective of a POSITA at the time of the earliest claimed priority date of June 5, 2004, as described in more detail below.

34. I have been informed that in IPR proceedings, such as this one, the party challenging the patent bears the burden of proving unpatentability by a preponderance of the evidence. I understand that a preponderance of the evidence means “more likely than not.”

35. For purposes of this declaration, I have been asked to provide my opinions on issues regarding unpatentability. I have been informed of the following legal standards, which I have applied in forming my opinions.

A. Level Of Ordinary Skill

36. I have been informed that a POSITA is determined by considering several factors, including the (i) type of problems encountered in the art; (ii) prior art solutions to those problems; (iii) rapidity with which innovations are made; (iv) sophistication of the technology; and (v) educational level of active workers in the field.

37. I have been instructed to assume that a POSITA is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors discussed above. A POSITA is assumed to be a person of ordinary creativity familiar with the prior art as of the priority date of the patent at issue.

B. Prior Art

38. I have been advised and understand that the information used to evaluate whether an invention was new and not obvious when made is generally referred to as “prior art.” I understand that in an IPR proceeding, prior art includes patents and printed publications that existed before the earliest claimed priority date or the earliest filing date of the patent (which I have been informed is also called the “effective filing date”). I have been informed and understand that a

patent or published patent application is prior art if it was filed before the earliest filing date of the claimed invention and that a printed publication is prior art if it was publicly available before the earliest filing date.

C. Anticipation

39. I have been informed that under 35 U.S.C. § 102, a patent claim is unpatentable for anticipation if the claimed subject matter was patented or described in a printed publication before the effective filing date of the claimed invention. I have been informed that this is referred to as unpatentability by anticipation. I have been informed that a patent claim is anticipated under § 102 if a single prior art reference discloses all the limitations of the claimed invention. I understand that limitations may be expressed or inherent such that the limitation is essential to the prior art.

D. Obviousness

40. I have been informed that for obviousness under 35 U.S.C. § 103, a patent claim is unpatentable if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSITA to which said subject matter pertains at the time the invention was made. I have been informed that this is referred to as unpatentability by obviousness.

41. I have been informed that an obviousness analysis includes the following considerations:

- a. Determining the scope and content of the prior art;
- b. Ascertaining the differences between the prior art and the claims at issue;
- c. Resolving the level of ordinary skill in the pertinent art; and
- d. Considering evidence of secondary indicia of nonobviousness (if available).

42. I have been informed that the relevant time for considering whether a claim would have been obvious to a POSITA is the time of invention. For my obviousness analysis, counsel for Petitioner instructed me to assume that the date of invention for the challenged claims is March 12, 2018. My opinions would not change if I assumed another, e.g., later, date of invention.

43. I have been informed that a reference may be modified or combined with other references or with a POSITA's own knowledge if the person would have found the modification or combination obvious. I have also been informed that a POSITA is presumed to know all the relevant prior art, and the obviousness analysis may take into account the inferences and creative steps that a POSITA would employ.

44. I have been informed that an obviousness determination must be made from the perspective of a POSITA. I have also been informed that there is no requirement that the prior art contain an express suggestion to combine known elements to achieve the claimed invention, and that a suggestion to combine known elements to achieve the claimed invention may come from the prior art as a whole or individually. Also, the obviousness analysis may rely on the inferences and creative steps a POSITA would employ, as filtered through his or her knowledge as of the priority date. But I understand that obviousness grounds cannot be sustained by mere conclusory statements and must include some articulated reasoning and rationale to support a legal conclusion of obviousness.

45. In determining whether a prior art reference could have been combined with another prior art reference or other information known to a POSITA, I have been informed that the following principles may be considered:

- a. A combination of familiar elements according to known methods is likely to be obvious if it yields predictable results;
- b. The substitution of one known element for another is likely to be obvious if it yields predictable results;
- c. The use of a known technique to improve similar items or methods in the same way is likely to be obvious if it yields predictable results;

- d. The application of a known technique to a prior art reference that is ready for improvement to yield predictable results;
- e. Any need or problem known in the field and addressed by the reference can provide a reason for combining the elements in the manner claimed;
- f. A person of ordinary skill often will be able to fit the teachings of multiple references together like a puzzle; and
- g. The proper analysis of obviousness requires a determination of whether a POSITA would have a “reasonable expectation of success”—but not “absolute predictability” of success—in achieving the claimed invention by combining prior art references.

46. I have been informed that, when a work is available in one field, design alternatives and other market forces can prompt variations of it, either in the same field or in another. I have been informed that if a POSITA could have implemented a predictable variation and would have seen the benefit of doing so, that variation is likely to have been obvious. I have been informed that, in many fields, such as the mechanical or electrical arts, market demand—not scientific literature—may drive design trends. I have been informed that, when there was a

design need or market pressure and there are a finite number of predictable solutions, a POSITA would have had a good reason to pursue those known options.

47. I have been informed that the law permits the application of “common sense” in examining whether a claimed invention would have been obvious to a POSITA. For example, I have been informed that combining familiar elements according to known methods and in a predictable way may suggest obviousness when such a combination would yield nothing more than predictable results. I understand, however, that a claim is not obvious merely because every claim element is disclosed in the prior art. A party asserting obviousness must provide a specific motivation to combine or modify the references as recited in the claims and explain why one skilled in the art would have reasonably expected to succeed in doing so.

48. I have been informed that there is no rigid rule that a reference or combination of references must contain a “teaching, suggestion, or motivation” to combine references. But I also understand that the “teaching, suggestion, or motivation” test can be a useful guide in establishing a rationale for combining elements of the prior art. I have been informed that this test poses the question as to whether there is an express or implied teaching, suggestion, or motivation to combine prior art elements in a way that results in the claimed invention, and that it helps to counter the use of hindsight, which is impermissible. Likewise, if a prior

art reference “teaches away” from a potential prior art combination, then a motivation to combine may not exist.

49. I am not aware of any evidence of secondary considerations, such as unexpected results, industry skepticism, long-felt unresolved need, commercial success, praise by others, or copying that would alter my opinions set forth below.

50. I have been informed that, in an obviousness analysis, prior art must be analogous art to the patent being considered. I have been informed that a prior art reference is considered to be analogous, or in the same field of art, if the reference is either (1) in the same field of endeavor as the challenged patent, regardless of the problems the challenged patent and the prior art address, or (2) reasonably pertinent to the particular problem being solved by the challenged patent.

VI. THE '883 PATENT (EX1001)

A. Overview

51. The '883 patent is titled “Playback Device Connection” and discloses “techniques for automatically configuring necessary parameters of a device to be coupled to a network with minimum human intervention.” EX1001, 4:65-67. I have been informed that the '883 patent was filed on March 11, 2019, and comes from a series of continuation applications, which purportedly claim priority to Provisional Application No. 60/577,284, which was filed on June 5, 2004.

EX1001, codes 60, 63, 65. I understand that, at this time, I should assume that the '883 patent is entitled to this earliest date, which means that eligible prior art must have existed before June 5, 2004.

52. The '883 patent identifies that adding a new device onto an existing network can be complicated for most consumers because the new device's settings must be configured to connect to the network. EX1001, 1:36-49, 2:1-4. The '883 patent purportedly simplifies the configuration process but, as I will opine in detail below, does so using steps that were already well known in the art at the time of the invention. EX1001, 2:16-29.

53. The '883 patent describes its simple process as three steps:

- Establishing a rudimentary communication path between a “first device” that already exists on a home network and a new “second device;”
- Providing “necessary parameters” over the rudimentary communication path to the second device so that the second device can connect to the home network; and
- Connecting the second device to the home network so that the second device may operate on and communicate with other devices on the home network.

EX1001, 2:16-63.

54. In an exemplary embodiment, this process is implemented in an “audio system” where a “controller” is the first device and a “zone player” is the second device. EX1001, 2:45-63. For example, Figure 3A illustrates this embodiment.

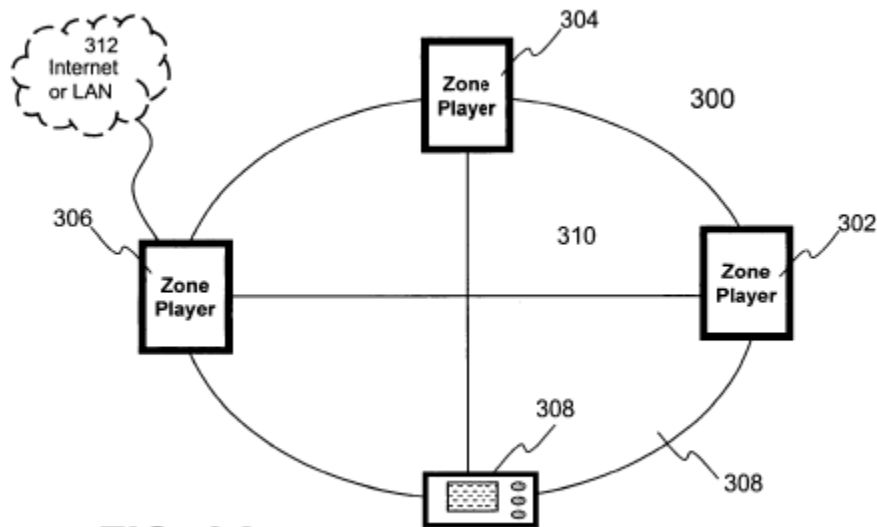


FIG. 3A

55. This figure depicts that “that there are three zone players 302, 304 and 306 and a controller 308 that form a network branch that is also referred to as an Ad-Hoc network 310.” EX1001, 9:1-3. The “controller 308” is responsible for “control[ing] the overall network setup process and sequencing” and can also “remotely control operations of one or more of the zone players.” EX1001, 4:1-24, 9:42-57. The zone players are “any other device on the network that is placed to participate in the automatic configuration process.” EX1001, 9:42-57. When a user wants to add a new zone player to the network, the ’883 patent describes that the

controller and the zone player execute the basic process that I outline above in three steps. The '883 patent further details this process in Figure 3B, reproduced below.

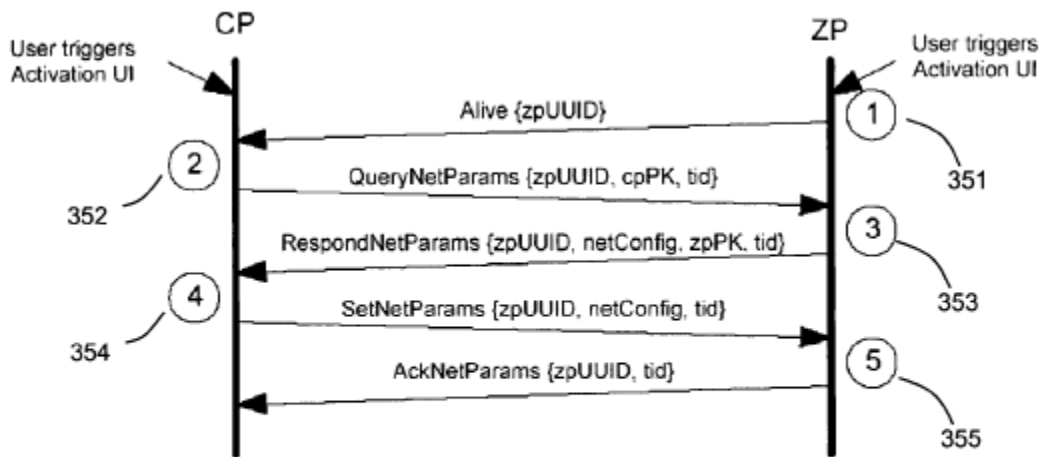


FIG. 3B

B. Prosecution History Overview

56. As I understand the prosecution history, Applicant originally sought to obtain claims directed to a “playback device,” a “non-transitory, computer-readable storage medium” that is “provisioned with program instructions that are executable to cause a playback device to perform functions,” and a method of connecting a playback device to a secure wireless local area network. EX1002, 25-30. The Examiner, however, told Applicant that many of these claims were anticipated or obvious over a reference referred to as Ladas (U.S. Patent Pub. 2004/0168081 A1, EX1013) alone or in combination with other references.

EX1002, 67-84. In response, Applicant added to the claims that the “secure wireless local area network (WLAN)” is “defined by an access point” and that the initial communication path “does not traverse the access point.” EX1002, 303, 312-313. I understand that the Examiner then allowed the amended claims. EX1002, 338.

VII. LEVEL OF ORDINARY SKILL IN THE ART

57. In my opinion, a POSITA at the time of the invention would have had at least a bachelor’s degree in computer science, electrical engineering, or a related field, and at least two years of work or research experience in the field of connected consumer electronics, networked engineering, or the equivalent. Additional work or research experience could substitute for education, and further education could substitute for work or research experience.

VIII. CLAIM CONSTRUCTION

58. I understand that, in this proceeding, the claims are construed according to their ordinary and customary meaning, in light of the specification and prosecution history, as understood by a POSITA at the time of the invention. I understand that this is the same claim construction approach used in district court litigation.

59. In my opinion none of the claim terms in the ’883 patent require construction.

60. I understand that there are other patents in the same family as the '883 patent. I have been told that U.S. Patent No. 10,439,896 (“the '896 patent”) is one of those family members. EX1008 (“the '896 patent”). I have also been informed that the '896 patent was involved in a case at the International Trade Commission (ITC) where the ITC judge construed some terms in the '896 patent that are also found in the claims of the '883 patent. EX1009, (ITC Claim Construction Order).

61. These terms include: “playback device;” “network interface;” “local area network;” “at least a second message containing network configuration parameters, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;” and “security key.” EX1009, (ITC Claim Construction Order). I understand that the ITC found “playback device” to mean a “data network device configured to process and output audio;” “network interface” to mean a “physical component of a device that provides an interconnection with a data network;” “wireless local area network” to mean “a wireless data communications network spanning a limited geographical area, such as an office, an entire building, or industrial park;” “security key” to have its plain and ordinary meaning, and “at least a second message ...” to mean “at least one second message....” EX1009 (ITC Claim Construction Order), 15-19, 26-40.

62. I have been instructed that no judge has found these claim constructions should apply to the '883 patent and that I should come to my own conclusions about whether the claims of the '883 patent require construction. As mentioned above, I do not believe that any of the '883 patent claims require construction.

63. To the extent that the above ITC constructions from the '896 patent are relevant to terms in the '883 patent's claims, I have considered them and concluded that, even if the constructions are applied to the '883 patent, they do not change my opinions. Should Patent Owner present any other constructions in this proceeding, I will supplement my opinions at that time.

IX. THE PRIOR ART

64. As explained below, it is my opinion that claims 1-20 would have been obvious over combinations of Cheshire, Meenan, and Spurgat, each of which I have been instructed to assume is prior art.

A. U.S. 7,532,862 B2 ("Cheshire")

65. Cheshire was filed on March 19, 2002, and issued May 12, 2009. Cheshire (EX1005), codes (22), (45).

66. Cheshire is analogous art to the '883 patent because they are in the same field of endeavor: wireless device configuration. *Compare, e.g.*, Cheshire (EX1005), 1:7-2:20, *with* EX1001, 1:25-32, 2:16-4:24. Further, Cheshire shares a

common goal with the '883 patent: improving wireless devices. *Compare, e.g.,* Cheshire (EX1005), 1:28-48, *with* EX1001, 2:1-4.

67. Cheshire relates to “wireless networks for computer systems.” Cheshire (EX1005), 1:9-10. It describes that “to communicate across a wireless network, a computing device must somehow be configured to join the wireless network.” Cheshire (EX1005), 1:28-30. Cheshire notes several challenges in configuring a new device. Cheshire (EX1005), 1:28-45. For example, there may be too many networks without guidance on which one to join and, for certain “peripheral device[s],” there “may be no easy way to enter an encryption key (or other configuration information).” Cheshire (EX1005), 1:28-45. To solve these challenges, Cheshire discloses “a method and an apparatus that uses reverse advertising to configure a new wireless device to join an existing wireless network.” Cheshire (EX1005), 1:10-13.

68. Figure 1 of Cheshire illustrates how devices can be connected according to the invention. Cheshire (EX1005), 2:61-3:2. For example, “existing wireless device 102,” “wireless device 108,” and “wireless device 110” are all connected on “existing wireless network 112.” Cheshire (EX1005), 2:61-3:2. Figure 1 further depicts “new wireless device 104” that is connected to “existing wireless device 102” over “new wireless network 106.” Cheshire (EX1005), 2:61-3:2.

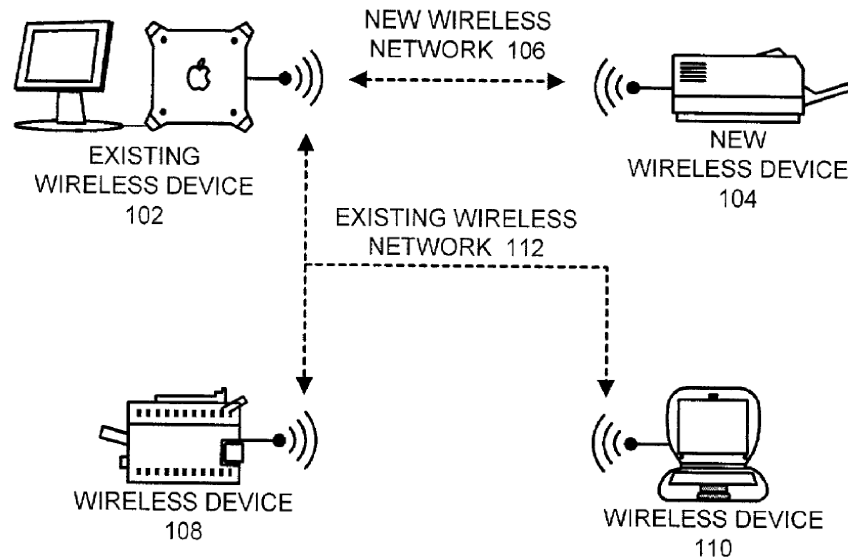


FIG. 1

Cheshire (EX1005), Fig. 1

69. Although Cheshire details that “[w]ireless devices 102, 104, 108 and 110 can generally include any type of computer system, peripheral device [such as audio output devices] or network appliance that can reside on a wireless computer network,” Cheshire depicts in Figure 1 existing wireless devices 102 as a personal computer and new wireless device 104 as a printer. Cheshire (EX1005), 3:3-17.

Cheshire discloses that the wireless networks 106 and 112 can include “networks that transmit information through infrared signals or radio frequency signals,” listing “local area wireless network” as an example. Cheshire (EX1005), 3:18-29.

70. Cheshire utilizes Figure 3 to illustrate its process for joining new wireless device 104 to existing wireless network 112. Cheshire (EX1005), 4:6-5:2. The process starts by “power[ing] up” new wireless device 104, which begins to

“advertise[]” new wireless network 106 (step 302). Cheshire (EX1005), 4:10-15. Next, new wireless device 104 selects a “link-local address” for itself (step 304) and begins advertising itself on new wireless network 106 (step 306). Cheshire (EX1005), 4:16-34. Existing wireless device 102 can then select the new wireless network 106 (step 308) and pick a link-local address for itself (step 310). Cheshire (EX1005), 4:35-46. Existing wireless device 102 subsequently uses a “Service Discovery protocol ... to discover the list of entities on new wireless network 106 that are awaiting configuration information (step 312).” Cheshire (EX1005), 4:47-52. Once the devices are connected, “existing wireless device 102 sends packet 200 to new wireless device 104 through new wireless network 106 (step 314). Cheshire (EX1005), 4:47-52. Packet 200 contains “a number of pieces of information that new wireless device 104 can use to communicate on existing wireless network 112.” Cheshire (EX1005), 3:45-47. After receiving packet 200, new wireless device 104 stops advertising new wireless network 106 (step 316) and uses the information in packet 200 to join existing wireless network 112 (step 318). Cheshire (EX1005), 4:66-5:2.

71. I believe that Cheshire’s configuration process contains the same basic steps as the ’883 patent’s method. Based on the above discussion, Cheshire’s method can be distilled as:

- Establishing “new wireless network 106”—e.g., “a computer-to-computer (Independent Basic Service Set (IBSS)) network”—between a “new wireless device 104” and “existing wireless device 102,” wherein “existing wireless device 102” is on “existing wireless network 112;”
- Providing “configuration information” over “new wireless network 106” to “new wireless device 104” so that it can join “existing wireless network 112;” and
- Connecting “new wireless network 106” to “existing wireless network 112” so that it may operate on and communicate with other devices on the existing wireless network. Cheshire (EX1005), 2:15-20, 3:45-56, 4:6-5:2.

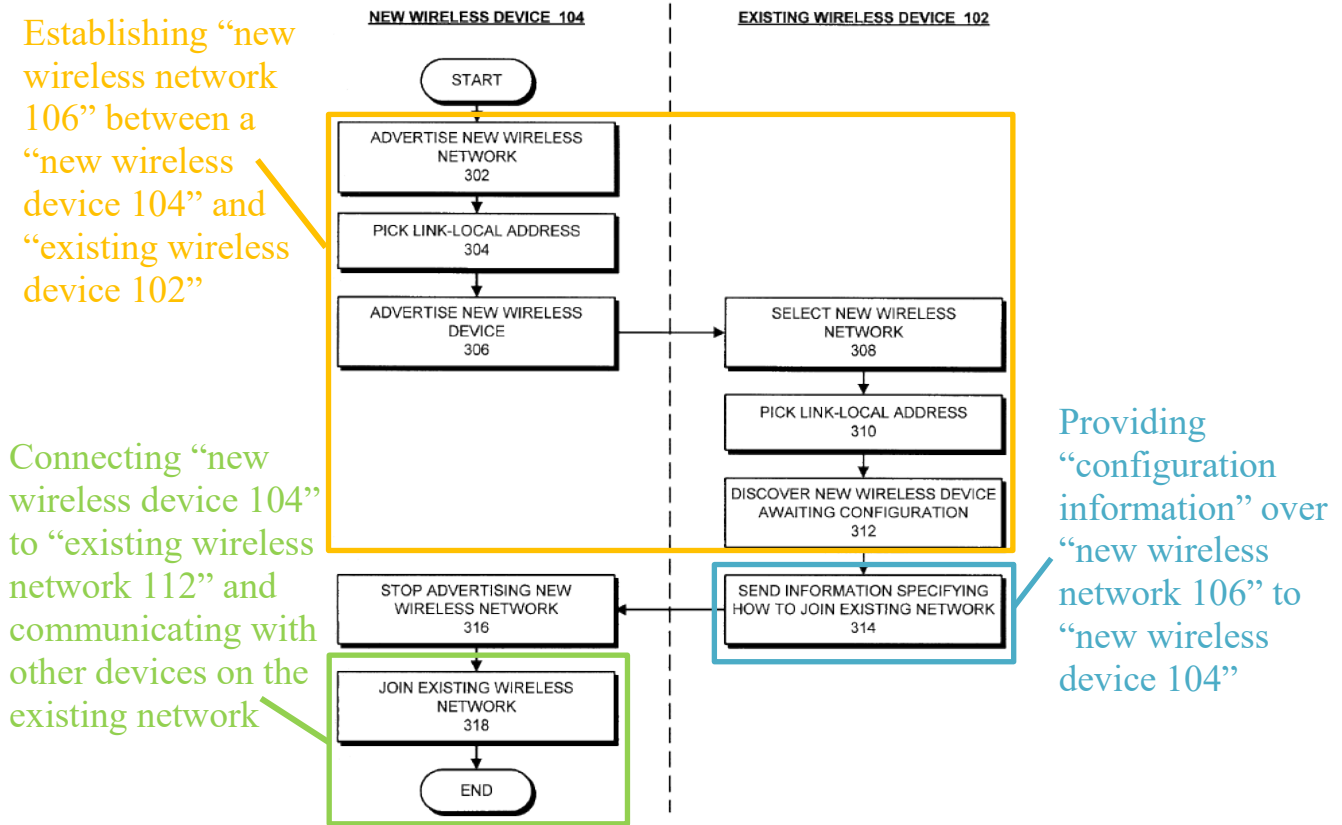


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated).

B. U.S. 7,313,384 B1 (“Meenan”)

72. Meenan was filed on October 31, 2002, and issued on December 25, 2007. Meenan is analogous art to the ’883 patent because they are in the same field of endeavor: wireless device configuration. *Compare, e.g., Meenan (EX1006), 1:5-21, with EX1001, 1:25-32, 2:16-4:24.* Further, Meenan shares a common goal with the ’883 patent: improving wireless devices. *Compare, e.g., Meenan (EX1006), 1:25-50, 20:43-48, with EX1001, 2:1-4.*

73. Meenan relates to “the configuration of a home network of computing devices.” Meenan (EX1006), 1:5-6. Meenan describes that “[i]n a home network of computing devices, a device on the network typically is set up or configured with particular information that enables communications with the other devices on the network.” Meenan (EX1006), 1:10-13. Figure 1 of Meenan depicts a home networking system 100 that comprises devices 112, a home-networking gateway 115, and a communication device 119. Meenan (EX1006), 2:49-54, Fig. 1. Devices 112 may include “general-purpose computers,” “special-purpose computers,” or combinations of these computers. Meenan (EX1006), 3:28-34. The “home-networking gateway 115 may include a home gateway device, such as a gateway, a router, or another communication device.” Meenan (EX1006), 4:33-35.

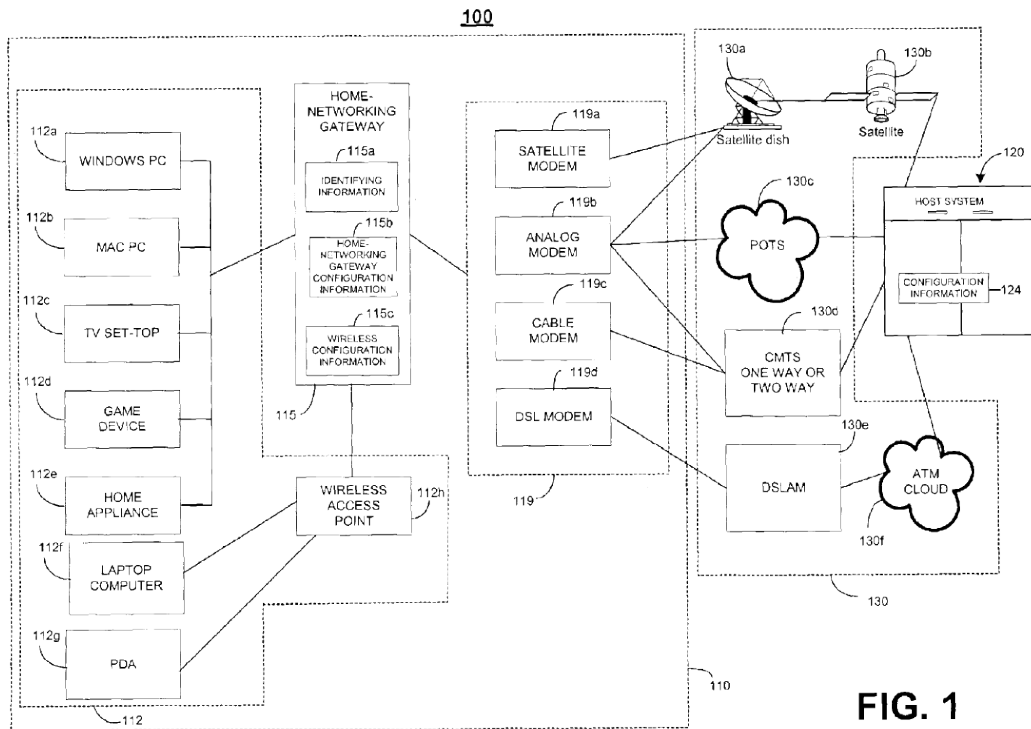


FIG. 1

Meenan (EX1006), Fig. 1. The home networking system 100 allows a device 112 to connect to a host system 120, which provides the device with access to the Internet. Meenan (EX1006), 2:55-3:2.

74. Meenan describes that devices 112 can be connected to the home-networking gateway 115 through wired or wireless network depending on the device. Meenan (EX1006), 1:25-28, 3:59-4:8, 8:24-33. In some cases, Meenan discloses that certain wireless devices (e.g., 112f and 112g) can connect to the home-networking gateway 115 through a wireless access point 112h. Meenan (EX1006), 3:59-4:8. The connection and communication between wireless devices (e.g., 112f and 112g) and wireless access point 112h can be based on wireless

protocols, such as the “Institute of Electrical and Electronics Engineers, Inc. (IEEE) 802.11 standard” or “the Bluetooth approach for short range wireless communications.” Meenan (EX1006), 4:9-20.

75. Meenan teaches methods of communicating between different devices 112 and home-networking gateway 115 to configure the devices. *See, e.g.*, Meenan (EX1006), 15:19-20:51. For example, Meenan describes the configuration processes 500 and 600 for wireless access points (15:19-17:61, Figs. 5 and 6) and 700 for wireless devices (17:62-20:51, Fig. 7).

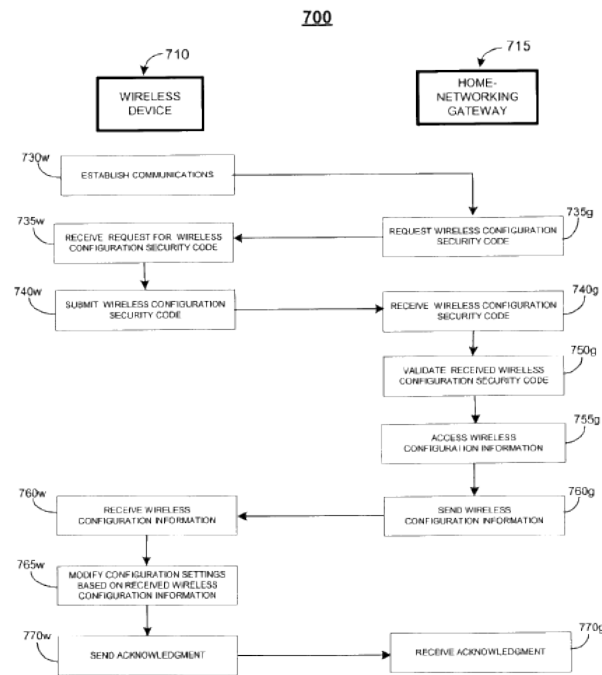


FIG. 7

Meenan (EX1006), Fig. 7.

76. Meenan discloses that “process 700 begins when the wireless device 710 establishes communications over the wired communications pathway with the home-networking gateway 715 (step 730w).” Meenan (EX1006), 18:64-67. Next, “home-networking gateway 715 requests provision of a wireless configuration security code from the wireless device 710 (step 735g),” which wireless device 710 receives (step 735w) and responds with the security code (step 740w). Meenan (EX1006), 19:7-12. Meenan describes that the response step may, for example, occur through user input. Meenan (EX1006), 19:7-15. Once home-networking gateway 715 receives the security code (step 740g), the gateway 715 validates the

information (step 750g), accesses wireless configuration information (step 755g), and sends the configuration information to wireless device 710 (step 760g).

Meenan (EX1006), 19:19-43. Wireless device 710 receives the configuration information (step 760w), updates its configuration settings with this information (step 765w), and then sends gateway 715 “an acknowledgment that the wireless configuration settings have been modified.” Meenan (EX1006), 19:43-67. Wireless device 710 may then communicate with gateway 715 and other devices wirelessly on the network. Meenan (EX1006), 19:46-64; *see also* Meenan (EX1006), 1:10-21.

77. Meenan effectively describes methods of configuring wireless devices that is similar to the '883 patent's method. *See, e.g.*, Meenan (EX1006), 15:19-20:51. For example, Meenan describes:

- Establishing “process 700 begins when the wireless device 710 establishes communications over the wired communications pathway with the home-networking gateway 715 (step 730w);”
- Providing “configuration information” to “wireless device 710” so that it can join “a home network;” and
- Connecting “wireless device 710” to the home network so that it may operate on and communicate with other devices through “wireless access point 112h.”

Meenan (EX1006), 17:62-20:51, Fig. 7.

C. U.S. 2002/0174243 (“Spurgat”)

78. Spurgat was filed on May 16, 2001, and published on November 21, 2002. Spurgat (EX1007), codes (22), (43). Spurgat is analogous art to the ’883 patent because it is in the same field of endeavor: wireless device configuration. *Compare, e.g.*, Spurgat (EX1007), ¶¶92-93, with EX1001, 1:25-32, 2:16-4:24. Spurgat is also similar to the ’883 patent because it describes wireless playback devices. Spurgat (EX1007), ¶7; EX1001, 2:45-63. Further, Spurgat shares a common goal with the ’883 patent: improving wireless devices. *Compare, e.g.*, Spurgat (EX1007), ¶¶5-6, with EX1001, 2:1-4.

79. Spurgat is titled “Proximity Synchronizing Audio Playback Device” and relates to “a digital audio playback device that uses wireless communication to interact and synchronize with a computing platform as well as other mobile digital audio players and fixed digital audio players.” Spurgat (EX1007), ¶3. Spurgat aims to provide “increased functionality of various digital audio players” by automating functions such as “interaction, communication and synchronizing the digital content on a plurality of digital audio players” that was traditionally done manually. Spurgat (EX1007), ¶6.

80. In its simplest embodiment, Spurgat describes a networked audio system comprising at least “a computing platform 103, for example, a personal computer, [that] is used as a gateway to enable various digital audio players 115

and 116 to be connected to the Internet or other computer network 102.” Spurgat (EX1007), ¶34. Through “a wireless network or wireless communication platform 104, the computing platform 103 is adapted to communicate with [the] various digital audio players” to form a “local wireless network as generally illustrated in Fig. 3.” Spurgat (EX1007), ¶34.

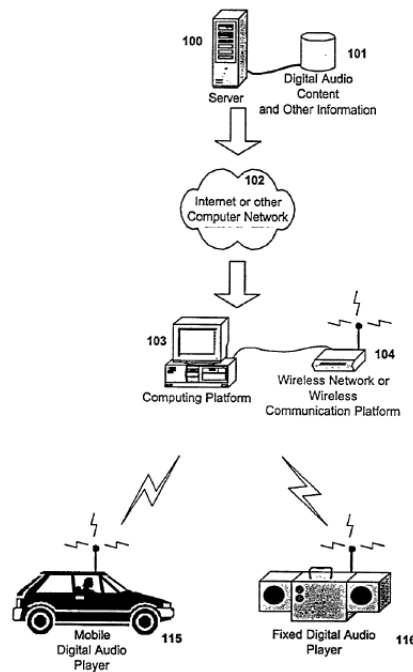


Figure 1

Spurgat, Fig. 1.

81. Spurgat discloses that a personal computer acts as an “audio gateway” to “download digital audio content and other information 101 from the server 100 (FIG. 1) connected to the Internet or other computer network 102.” Spurgat (EX1007), ¶41. Through a wireless access point (e.g., 106 in Figure 4 below), the

personal computer “either automatically or at user request ... pass[es] the digital audio content and other information 101, including new playlists, to mobile digital audio players 115 and fixed digital audio players 116.” Spurgat (EX1007), ¶42. This allows a user to move between devices and “automatically be able to continue the same music and playlist in a seamless manner.” Spurgat (EX1007), ¶43.

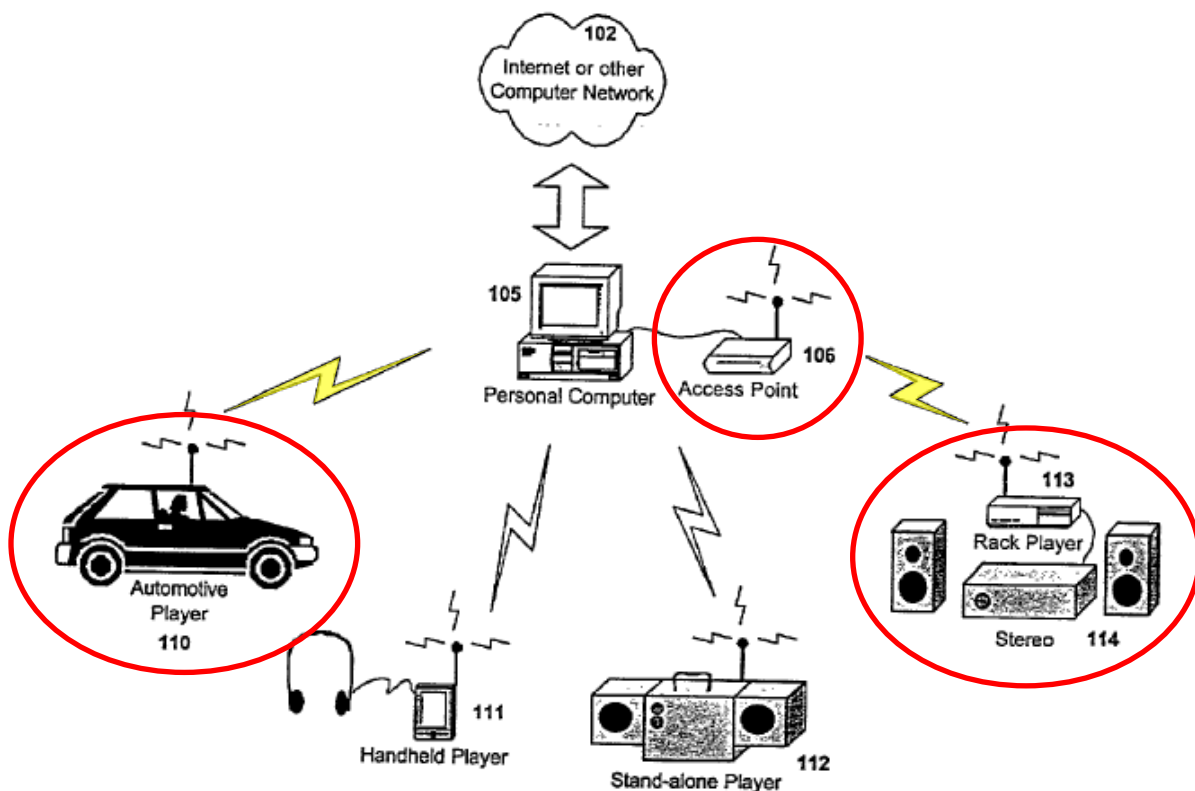


Figure 4

Spurgat, Fig. 4 (annotated).

82. Spurgat describes the components of its audio playback devices. Spurgat (EX1007), ¶¶58-86. For example, Spurgat’s “Fixed Player” contains a

“processor 155,” “various software and firmware components [that] are typically stored ... in player storage 156, such as a hard drive ...,” and “an internal or external wireless network interface or wireless communication interface 14.”
Spurgat (EX1007), ¶¶71-72.

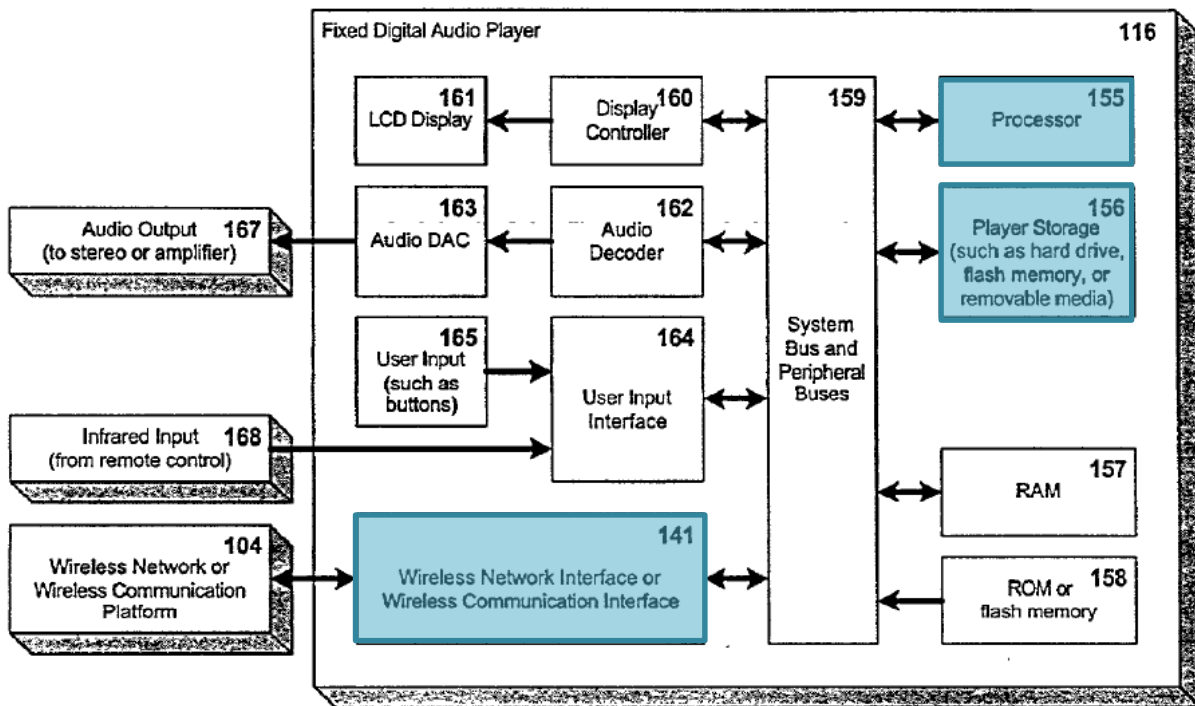


Figure 11

Spurgat, Fig. 11 (annotated).

X. GROUNDS OF UNPATENTABILITY

83. Based on my review of the materials set forth above, including my application of the knowledge of a POSITA, it is my opinion that claims 1-20 of the '883 patent would have been obvious to one of ordinary skill in the art as of June 5, 2004.

84. In particular, it is my opinion that claims 1-20 of the '883 patent would have been obvious to a POSITA based on the following grounds:

Grounds	Claims	Basis	Prior Art
1	1-3, 7-8, 10, 12, 14-15, 20	§ 103	Cheshire in view of the knowledge of a POSITA
2	1-10, 12, 14-18, 20	§ 103	Cheshire, Meenan
3A	1-3, 7-8, 10-15, 19	§ 103	Cheshire, Spurgat
3B	1-19	§ 103	Cheshire, Meenan, and Spurgat

A. Ground 1: Cheshire in View of the Knowledge of a POSITA Renders Obvious Claims 1-3, 7-8, 10, 12, 14-15, and 20

1. Claim 1

a. [1Pre]: A playback device comprising

85. In my opinion, Cheshire discloses or renders obvious *a playback device*.

86. Cheshire describes a “a system that uses reverse advertising to configure a *new wireless device [104]* to join an existing wireless network.”

Cheshire (EX1005), 1:53-55 (emphasis added), Figs. 1 and 3. Cheshire disclose that “[w]ireless devices 102, **104**, 108 and 110 can generally include any type of computer system, peripheral device or network appliance that can reside on a wireless computer network.” Cheshire (EX1005), 3:3-10 (emphases added). As an example of a peripheral device, Cheshire lists “audio output devices.” Cheshire (EX1005), 3:10-14. As its name suggests, an audio output device is one that processes and outputs audio like, for example, sound in the form of music. Spurgat (EX1007), ¶¶69-86; WO 03/093950 (EX1015), 46:7-9 (“The use of audio output devices ... that admit external sound ...”). Because Cheshire describes that these audio output devices are examples of “wireless device 104” that implement Cheshire’s configuration process (as detailed in depth below), a POSITA would have understood that the audio output device contains the components needed to execute the process. Cheshire (EX1005), 3:3-10, 4:6-5:2; Spurgat (EX1007), ¶¶3, 34. In other words, an audio output device in Cheshire is not just an ordinary speaker because it is configured to join and communicate over a wireless network. Cheshire (EX1005), 3:3-10, 4:6-5:2. A POSITA would have selected an audio output device to be the new wireless device 104 because Cheshire discloses the audio output device as an option of a wireless network device. Moreover, a POSITA would have made this selection at least because audio output devices had previously been placed on networks. Spurgat (EX1007), ¶¶3, 34.

87. Therefore, A POSITA would have understood Cheshire's audio output device to be a *playback device* because audio output devices were known to be configured to process and output audio. *See, e.g.*, Spurgat (EX1007), ¶¶69-86; WO 03/093950 (EX1015), 46:7-9 (“The use of audio output devices ... that admit external sound”).

88. Accordingly, in my opinion, Cheshire discloses *a playback device comprising* the components and features that I detail more in depth below.

b. [1a]: a network interface that is configured to provide an interconnection with at least one data network

89. In my opinion, Cheshire discloses or at least *suggests a network interface that is configured to provide an interconnection with at least one data network.*

90. Cheshire's new wireless device 104 contains a *network interface that is configured to provide an interconnection.* For example, the reference teaches that “new wireless device 104 ... can reside on a wireless computer network.” Cheshire (EX1005), 2:67-3:14. Cheshire also explains that “new wireless device 104 advertises a new wireless network 106 (step 302).” Cheshire (EX1005), 4:7-12, Fig. 3. “[N]ew wireless network 106 ... couples together new wireless device 104 and existing wireless device 102” (Cheshire (EX1005), 2:67-3:2), and allows devices 104 and 102 to “initially communicate[]” (Cheshire (EX1005), 3:30-35).

Cheshire's networks 106 and 112 "can be used to communicate with the Internet." Cheshire (EX1005), 3:23-29. Cheshire also details that a wireless transceiver is the component that "enables the computing device to communicate through a wireless network." Cheshire (EX1005), 1:16-19. A POSITA would have understood that new wireless device 104 includes a *network interface* because new wireless device 104 resides on and communicates over wireless networks, which indicates that it is *configured to provide an interconnection with at least one data network*. See Cheshire (EX1005), 1:16-19, 1:28-36, 2:67-3:29; Spurgat (EX1007), ¶72 (disclosing a "wireless network interface or wireless communication interface 141"; *see also* Spurgat (EX1007), ¶41; Ladas (EX1013), ¶¶11, 23 (describing a "a network communications interface").

91. These disclosures are consistent with the '883 patent's description of a *network interface* as a component that "facilitates a data flow between a data network (i.e., the data network 108 of FIG. 1) and the zone player 200 and typically executes a special set of rules (*i.e.*, a protocol) to send data back and forth." EX1001, 6:36-61. Moreover, the '883 patent describes that the "network interface functions by a wireless means for the zone player 200 to communicate with other devices in accordance with a communication protocol (such as the wireless standard IEEE 802.11a, 802.11b, or 802.119)." EX1001, 6:54-59. Cheshire's teachings that I described above are consistent with these disclosures

because Cheshire's new wireless device 104 is configured to perform these same features.

92. Although I believe that Cheshire discloses [1a], I also think that a POSITA would have known or found it obvious that Cheshire's new wireless device 104 contains a *network interface* because device 104 was configured to communicate on a network. A POSITA would have understood that all wireless devices which are intended to operate on a wireless network must, of necessity, employ an interface to such a network, i.e., a "network interface." Spurgat (EX1007), ¶72; *see also* Spurgat (EX1007), ¶41; Ladas (EX1013), ¶¶11, 23. An example of such a component, as Cheshire describes, is a wireless transceiver, which is responsible for communicating on the wireless network. Cheshire (EX1005), 1:15-36 ("transceiver that enables the computing device to communicate through a wireless network."). Moreover, a POSITA would have understood that when a device advertises a network or communicates with another device over a network, that device has *an interconnection with at least one data network*. For example, Cheshire explains that networks 106 and 112 are used for communicating between devices and are also capable of connecting to the Internet. Cheshire (EX1005), 3:18-29. Accordingly, because Cheshire describes that new wireless device 104 creates new wireless network 106 and then communicates with existing wireless device 112 over new wireless network 106, and because new

wireless device 104 is configured to communicate over other networks and with the Internet, a POSITA would have known or found it obvious that Cheshire discloses [1a].

c. [1b]: at least one processor;

93. In my opinion, Cheshire discloses or at least suggests *at least one processor*.

94. Cheshire's new wireless device 104 includes a *processor*. For example, as I described above, Cheshire implements a series of steps for new wireless device 104 to communicate with existing wireless device 102 to join a network. Cheshire (EX1005), 3:30-35. Cheshire discloses that new wireless device 104 "advertises a new wireless network 106 (step 302)," "picks itself a link-local address on new wireless network 106 (step 304)," and "begins listening for incoming configuration packets, and creates a service advertisement announcing the fact that it is listening and ready for wireless configuration [step 306]." Cheshire (EX1005), 4:11-25, Fig. 3. These steps are also depicted in Cheshire's Figure 3, reproduced below.

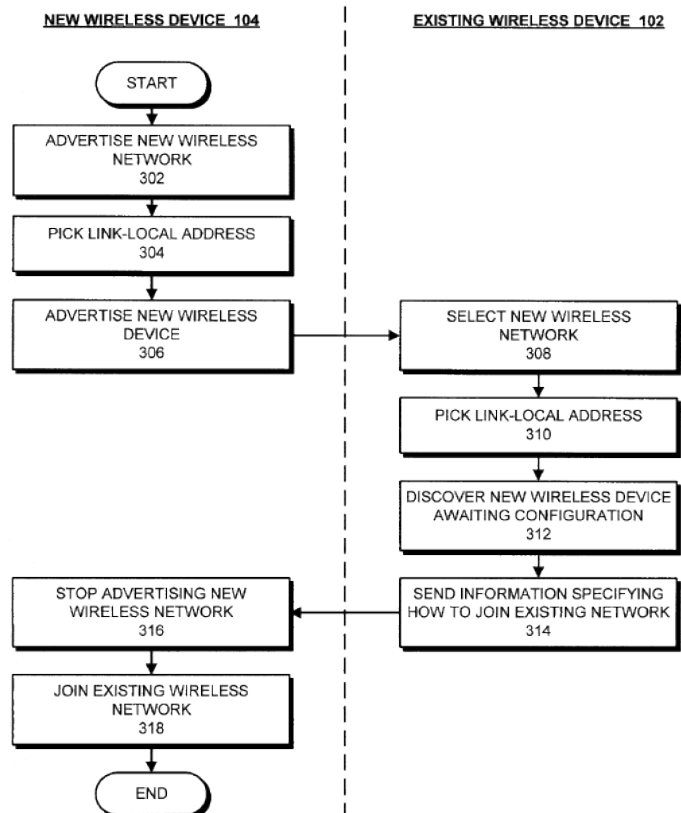


FIG. 3

Cheshire (EX1005), Fig. 3.

95. A POSITA would have known that a device, like new wireless device 104, required a processor to execute steps 302, 304, and 306. Spurgat (EX1007), ¶72; Ladas (EX1013), ¶¶11, 23. A processor is a component of an electronic device that executes instructions to perform the instructed process functions. Indeed, a processor would have been and still would be used to execute the steps in Cheshire to implement its process. Spurgat (EX1007), ¶72; Ladas (EX1013), ¶¶11, 23. A POSITA, or anyone with even a rudimentary understanding of computing, would have known that no computing device, such as one that needs

to be configured, can exist without a processor. Therefore, Cheshire's new wireless device 104 contains a processor.

96. Cheshire's disclosures about how new wireless device 104 operates are also consistent with the '883 patent and other prior art's description of a processor. For example, the '883 patent provides that a processor is "configured to control the operation of other parts in zone player 200." *See* EX1001, 7:2-4. The '883 patent's description of a processor is already disclosed in other prior art. For example, Spurgat describes "a processor 155 that is responsible for executing various software and firmware components." Spurgat (EX1007), ¶72. And Ladas instructs that "[a] processor is coupled to the network communications interface and the memory and executes the machine instructions, which cause the processor to carry out functions that are generally consistent with the functions implemented by the computing device in the above described method." Ladas (EX1013), ¶11.

97. A POSITA would have found it obvious that Cheshire's new wireless device 104 contains *at least one processor*. As described above, processors are components used in any wireless network device because they are responsible for executing instructions or functions of a device. Accordingly, a POSITA would have found it obvious to include a *processor* in new wireless device 104 because Cheshire already teaches that new wireless device 104 executes a series of steps.

98. Therefore, Cheshire discloses or renders obvious [1b].

**d. [1c]: a non-transitory computer-readable medium;
and**

99. In my opinion, Cheshire discloses or at least suggests *a non-transitory computer-readable medium*.

100. Cheshire's new wireless device 104 includes *a non-transitory computer-readable medium*. As described above, Cheshire describes steps that new wireless device 104 executes to advertise a network and itself. *See supra* Section X.A.1.c. New wireless device 104 must have been programmed to execute these steps, and these steps must have been saved on new wireless device 104 for them to be executed. Cheshire (EX1005), 2:48-51; *see also* Cheshire (EX1005), 2:53-58 (describing types of memory used in computing systems); Spurgat (EX1007), ¶72; Ladas (EX1013), ¶¶11, 23. Indeed, Cheshire discloses as such, providing that "data structures and code ... are ... stored on a computer-readable storage medium, which may be any device or medium that can store code and/or data for use by a computer system." Cheshire (EX1005), 2:48-51. Cheshire further details that examples of the computer-readable storage medium include "magnetic and optical storage devices such as disk drives, magnetic tape, CDs (compact discs) and DVDs (digital versatile discs or digital video discs), and computer instruction signals embodied in a transmission medium (with or without a carrier

wave upon which the signals are modulated).” Cheshire (EX1005), 2:53-58.

Therefore, Cheshire discloses a *non-transitory computer-readable medium*.

101. Cheshire’s disclosures about how new wireless device 104 operates are also consistent with the ’883 patent and other prior art’s description of a non-transitory computer-readable medium. The ’883 patent only uses “non-transitory computer-readable medium” in its claims but describes that “memory 206 may be loaded with one or more software modules that can be executed by the processor 204 to achieve desired tasks.” EX1001, 7:4-6. Moreover, Spurgat describes that “[t]he various software and firmware components are typically stored in read only memory, or ROM, or flash memory 158 or in player storage 156, such as a hard drive, flash memory, or removable media.” Spurgat (EX1007), ¶72. And Ladas provides that “the memory and executes the machine instructions, which cause the processor to carry out functions that are generally consistent with the functions implemented by the computing device in the above described method.” Ladas (EX1013), ¶¶11, 23-24.

102. A POSITA would have found it obvious that Cheshire’s new wireless device 104 includes a *non-transitory computer-readable medium*. A POSITA would have known that all wireless networking devices required a non-transitory storage or memory component to function. Indeed, Cheshire even claims a “computer-readable storage medium” used in a computer to execute Cheshire’s

method. Cheshire (EX1005), 6:62-8:39 (claims 11-20). New wireless device 104 also knows what steps it needs to take once it powers on because its configuration process begins without further input from the user, which would suggest to a POSITA that Cheshire's configuration process is stored on a non-transitory storage medium. Because Cheshire discloses that new wireless device 104 does both of these features, a POSITA would have known or found it obvious that new wireless device 104 includes a *non-transitory computer-readable medium*. Cheshire (EX1005), 2:48-59, 4:11-25, Fig. 3.

103. Therefore, Cheshire discloses or renders obvious [1c].

- e. **[1d]: program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:**

104. In my opinion, Cheshire discloses or at least suggests *program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions*.

105. As discussed above, Cheshire describes a configuration process that new wireless device 104 executes. Cheshire teaches that “computer-readable storage medium storing instructions that when executed by a computer cause the computer to perform a method” Cheshire (EX1005), 6:62-7:29. Moreover,

Cheshire further instructs that “data structures and code ... [are] stored on a computer-readable storage medium ... for use by a computer system.” Cheshire (EX1005), 2:48-51.

106. A POSITA would have understood the “computer-readable storage medium” in Cheshire’s new wireless device 104 to store the steps that new wireless device 104 implements to join an existing wireless network. *See supra* Section X.A.1.d. And a POSITA would have known that the processor executes the stored steps because that is the routine function of the processor in wireless electronic devices. *See supra* Section X.A.1.d; Spurgat (EX1007), ¶72; Ladas (EX1013), ¶11.

107. Therefore, Cheshire discloses [1d] or renders [1d] obvious.

- f. **[1e.1]: detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;**

108. In my opinion, Cheshire discloses or at least suggests *detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup.*

109. Cheshire teaches *detecting a triggering event that causes the playback device to enter a setup mode.* For example, as depicted in Figure 3, reproduced

below, Cheshire describes how the configuration process “starts, for example, when a new wireless device 104 ... powers up.” Cheshire (EX1005), 4:6-11.

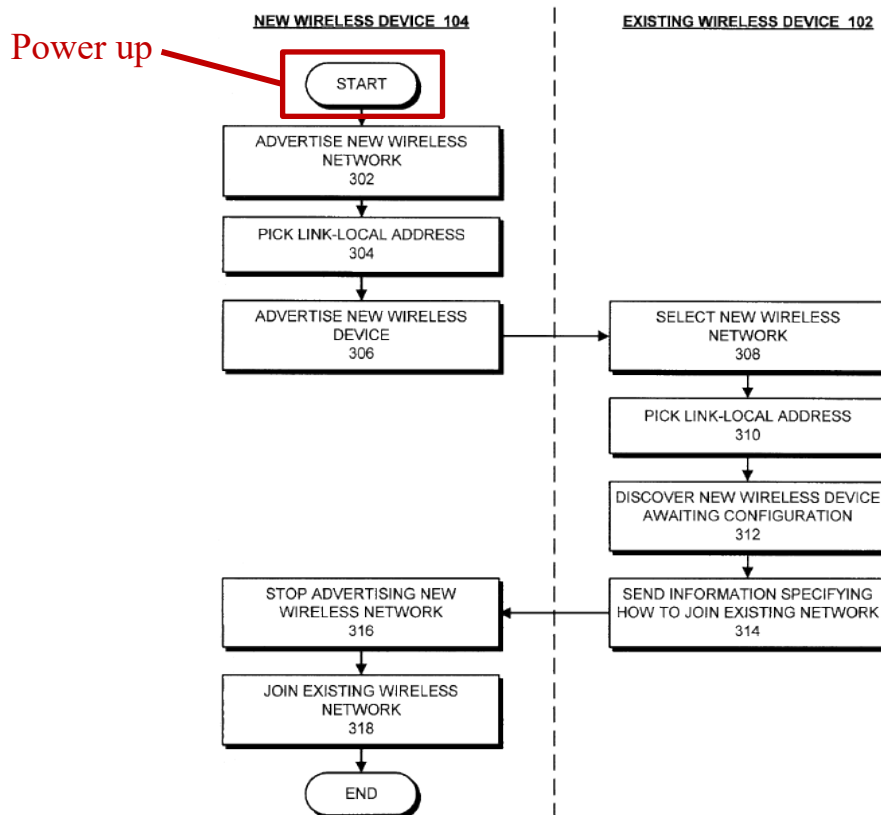


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated), 4:7-11.

110. A POSITA would have understood a “setup mode” to be a state in which a device is being activated or configured. US 2003/0187985 A1 (EX1016), ¶¶30-33, 50. This state is different from other modes where, for example, the device is functioning fully. Cheshire (EX1005), 4:6-5:2; Rector (EX1021), ¶¶7-9; Meenan (EX1006), 17:62-20:48; US2003/0187985A1 (EX1016), ¶¶30-33, 50. Moreover, a POSITA would have known a triggering event to be a signal that

causes another action (i.e., telling the device to enter a state in which it can be configured to join a network). US 5,386,552 (EX1011), 3:61-66 (“The processing logic of the present invention is initiated upon the occurrence of a triggering event. A triggering event is the occurrence of some system condition that initiates the operation of saving the system processing state to a nonvolatile mass storage device. Several conditions may produce a triggering event.”). For example, a POSITA would have known that common ways to force a device to enter such a state would include pressing a specific button, powering the device on, or having the user select a search mode. Cheshire (EX1005), 4:7-15; US 6,642,852 B2 (EX1012), 1:38-51, 9:18-39 (“setup mode” key). Furthermore, a POSITA would have interpreted Cheshire’s disclosures as an indication that the triggering event is detected because a detection occurs at least when the device senses a change in a state. Powering on a device in Cheshire changes new wireless device 104’s state from off to on, and it also puts the device into a state where it begins running its configuration process, as evidenced by the device automatically proceeding to step 302 and advertising new wireless network 106 upon power up. Therefore, because Cheshire’s new wireless device 104 begins its configuration process after being turned on, a POSITA would have understood that it detects the power on. In fact, a POSITA would have understood that a wireless device such as described in Cheshire detects a “power on” event as a prerequisite to its operation since such an

event initiates the fundamental processes required for the device to function. Upon “power on,” the device must recognize this transition from an “off” state to an “on” state to begin initializing hardware components and executing instructions. This detection is inherent to the device’s architecture.

111. Cheshire’s use of a power-on as a triggering event to begin its configuration is also consistent with the ’883 patent and other prior art’s description of a non-transitory computer-readable medium. For example, the ’883 patent describes in dependent claim 2 that powering up is a triggering event. EX1001, 18:30-34; *see also* EX1001, 12:25-32, 12:67-13:4. Moreover, other prior art, such as Ladas, evidences that this step was known, providing that a user “presses bind button 124” to start a configuration process. Ladas (EX1013), ¶38. And US 6,642,852 B2 (EX1012) describes the use of buttons to begin setup processes or a “setup mode.” US 6,642,852 B2 (EX1012), 1:38-51, 9:18-39.

112. Cheshire further discloses that new wireless device 104 *transmits at least a first message indicating that it is available for setup*. Cheshire (EX1005), 4:20-25. For example, in step 306, “new wireless device 104 ... creates a service advertisement announcing the fact that it is listening and ready for wireless configuration.” Cheshire (EX1005), 4:20-25, Fig. 3; *see also* Cheshire (EX1005), 4:7-15, 4:16-34.

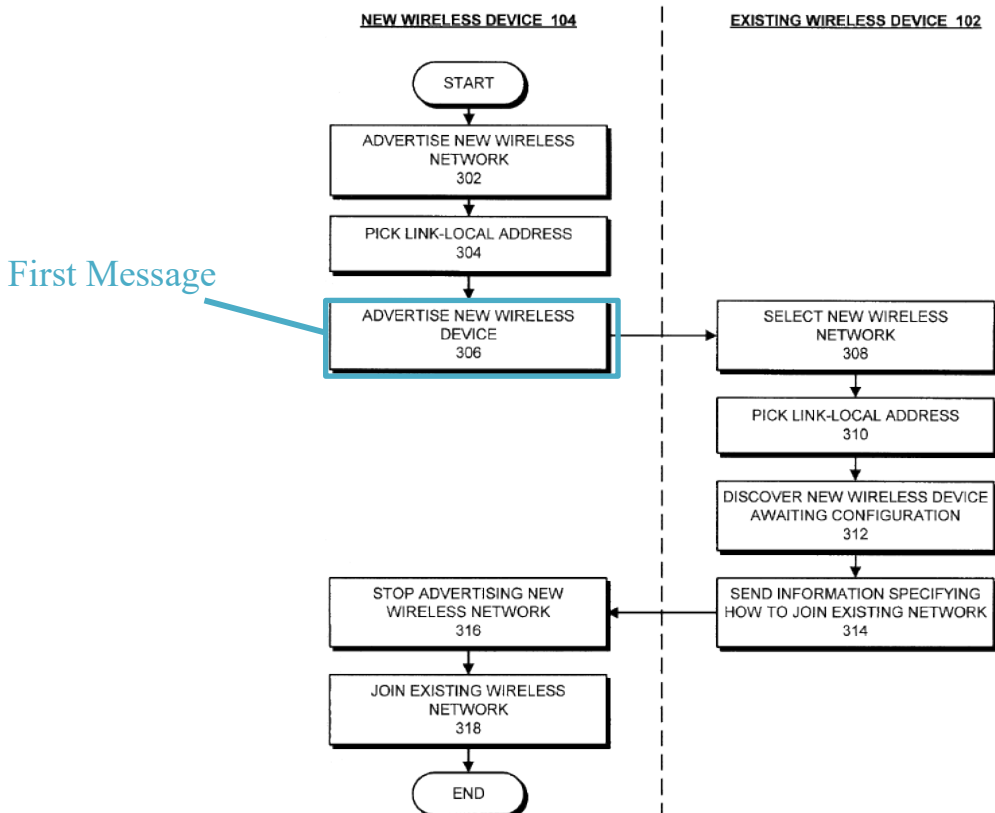


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated).

113. The service advertisement in Cheshire is a message. A POSITA would have known that Cheshire’s service advertisement is a message because it communicates to other devices that it is looking to join an existing network. Moreover, a POSITA would have understood that Cheshire’s “service advertisement announcing the fact that it is listening” is a *first message* because it is the first communication that is sent out to other devices from new wireless device 104. Cheshire (EX1005), 4:20-23. Because the “service advertisement” is telling other devices that “new wireless device 104 ... [is] ready for wireless

configuration,” a POSITA would have understood that the announcement is *an indication* that new wireless device *is available for setup*. Cheshire (EX1005), 4:20-23.

114. While a POSITA would have found [1e.1] obvious for the reasons discussed above, a POSITA would have also found [1e.1] obvious because detection of triggering events was a known and common way to begin device setup. For example, it was known that wireless devices do not necessarily automatically connect to a wireless network and that connecting to a wireless network can be difficult when there are several to choose from. *See, e.g.*, Cheshire (EX1005), 1:28-36. Therefore, a POSITA would have known that wireless devices need to be told to connect to a network. Based on the state of the art, a POSITA would have known that these instructions could be given to a device through a program that allows a user to search for a network or, if the device does not have a user interface, through an action such as pushing buttons or powering on the device. Cheshire (EX1005), 4:10-11; Rector (EX1021), ¶¶3-5; Ladas (EX1013), ¶38. A POSITA would have known that a device detects the actions because they change the state that the device is in, starting the configuration process.

115. Therefore, a POSITA would have known or found [1e.1] obvious over Cheshire.

- g. [1e.2(a)]: while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device,**

116. In my opinion, Cheshire discloses or at least suggests *while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device.*

117. Cheshire describes that existing wireless device 102 is a *computing device*. Cheshire discloses that “new wireless device 104 initially communicates with existing wireless device 102” *See* Cheshire (EX1005), 3:30-35. And “[existing wireless device] 102 ... can generally include any type of computer system” such as “a device controller.” Cheshire (EX1005), 3:3-10. Cheshire thus teaches that existing wireless device 102 is a *computing device*.

118. Moreover, Cheshire further discloses or renders obvious that existing wireless device 102 is *installed with an application for controlling the playback device*. As noted above, Cheshire details that existing wireless device is a “device controller.” Cheshire (EX1005), 3:3-10. Based on this disclosure, a POSITA would have known or found it obvious that existing wireless device 102 *is installed with an application for controlling the playback device*. To be a controller, a POSITA would have understood that the device would have programming on the controller

that enables the controller to control another device. Put another way, device controllers are programmed to tell other devices to do something. A POSITA would have known that this type of programming is an application because an application is merely a program with a specific task. Therefore, Cheshire describes or renders obvious that existing wireless device 102 is a *computing device that is installed with an application for controlling the playback device.*

119. Cheshire further describes or renders obvious that new wireless device 104 *receives a response to the first message that facilitates establishing an initial communication path with existing wireless device 102.* With reference to Figure 3, Cheshire describes that after new wireless device 104 is advertised on new wireless network 106, existing wireless device 102 executes a series of steps (steps 308, 310, and 312) to join new wireless network 112 and discover new wireless device 104. Cheshire (EX1005), 4:35-52.

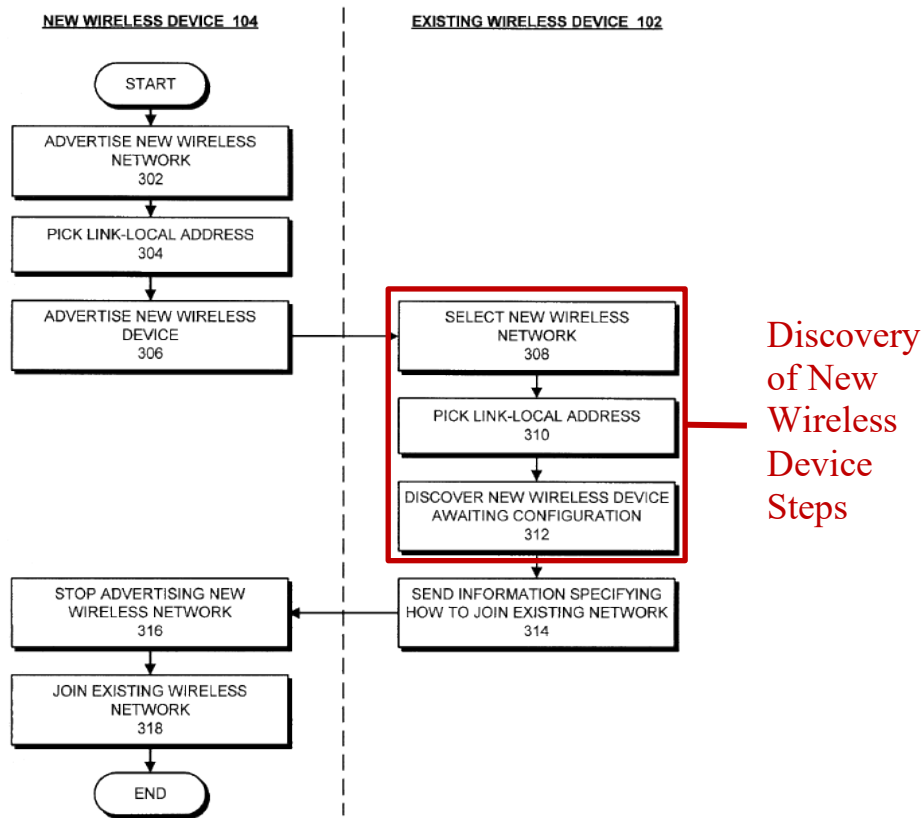


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated).

120. Cheshire further describes or renders obvious that new wireless device 104 *receives a response to the first message that facilitates establishing an initial communication path with* existing wireless device 102 in two separate ways.

121. **First**, when Cheshire advertises new wireless device 104 on new wireless network 106, it is discoverable by other devices, such as existing wireless device 102. Cheshire (EX1005), 4:20-30. For “new wireless device 104 [to] initially communicate[] with existing wireless device 102,” the two devices must first agree to communicate. *See* Cheshire (EX1005), 3:30-35, 4:20-30. Cheshire

describes that this agreement involves “receiving a request to join the new wireless network from the existing wireless device [102]” and “allowing the existing wireless device to join the new wireless network.” Cheshire (EX1005), 2:4-10.

122. Based on Cheshire’s description of this joining step, a POSITA would have known that “receiving the information from the existing wireless device on the existing wireless network” (Cheshire (EX1005), 2:4-6) means that the existing wireless device was connected to the existing wireless network, not that the transmission of information occurs over the existing wireless network. In particular, Cheshire notes that this joining step occurs before the new wireless device is on the existing network, which is evidenced by the fact that the step “receiving information from the existing wireless device specifying how to join the existing wireless network” is preceded by the “allowing the existing wireless device to join the new wireless network.” Cheshire (EX1005), 2:4-10.

123. A POSITA would have understood that Cheshire’s “request to join the new wireless network from the existing wireless device [102]” (Cheshire (EX1005), 2:6-7) is a response to the advertisement of new wireless device 104 because it only occurs after new wireless device 104 is advertised and is a reaction caused by the advertisement. Cheshire (EX1005), 4:35-52, 2:4-10.

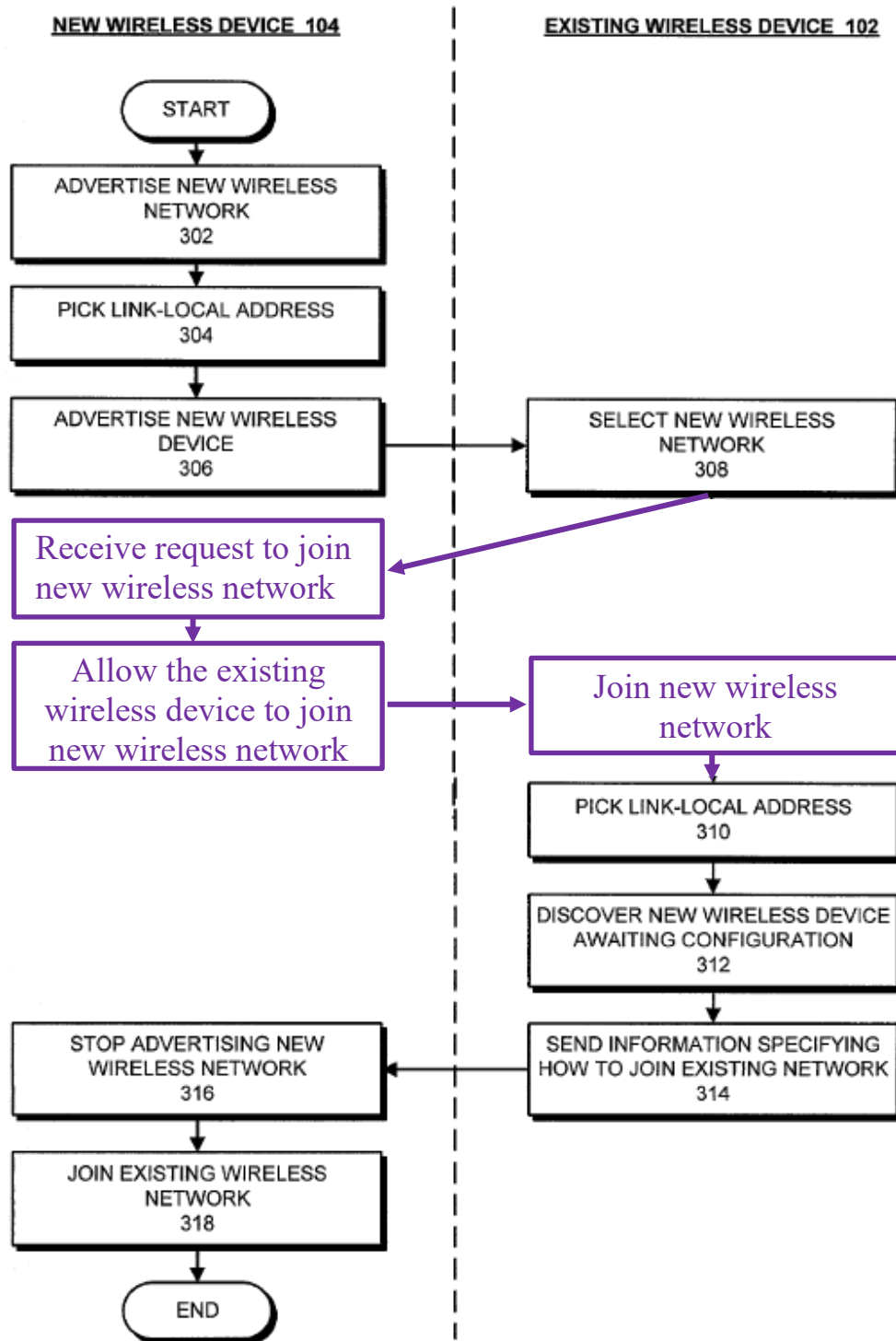


FIG. 3

Cheshire (EX1005), Fig. 3 (modified; annotated).

124. Moreover, a POSITA would have known that this response establishes *an initial communication* path between devices 104 and 102 because Cheshire discloses that the devices “initially communicate[]” over new wireless network 106 “in order to receive configuration information, which allows new wireless device 104 to join existing wireless network 112” Cheshire (EX1005), 3:30-35. In other words, Cheshire discloses that new wireless network 106 is used for communication between devices 104 and 102 **before** device 104 has access to existing wireless network 112. Therefore, a POSITA would have known or found it obvious that new wireless device 104 *receives a response to the first message that facilitates establishing an initial communication path with* existing wireless device 102.

125. **Second, and alternatively**, with reference to Figure 3, Cheshire describes that after device 104 is advertised on new wireless network 106, existing wireless device 102 executes a series of steps (steps 308, 310, and 312) to discover device 104. Cheshire (EX1005), 4:35-52. For example, Cheshire discloses that device 102 “selects the new wireless network 106 (step 308),” “picks itself a link-local address on new wireless network 106 (step 310)” and then “uses DNS Service Discovery (or another appropriate Service Discovery protocol known to those skilled in the art) to discover the list of entities on new wireless network 106 that are awaiting configuration information (step 312).” Cheshire (EX1005),

4:35-52, Fig. 3. Service Discovery protocols involve communication (or an exchange of information) between devices to establish a connection. Spurgat (EX1007), ¶¶93, 107, Figs. 17, 22, 23. A POSITA thus would have known that when existing wireless device 102 “uses DNS Service Discovery,” it sends a message to the device that is waiting configuration because the step establishes a connection between the devices. Spurgat (EX1007), ¶¶93, 107, Figs. 17, 22, 23. Therefore, because Cheshire describes the use of Service Discovery protocols to connect device 102 to device 104 over new wireless network 106, Cheshire discloses or renders obvious that new wireless device 104 *receives a response to the first message that facilitates establishing an initial communication path with existing wireless device 102.*

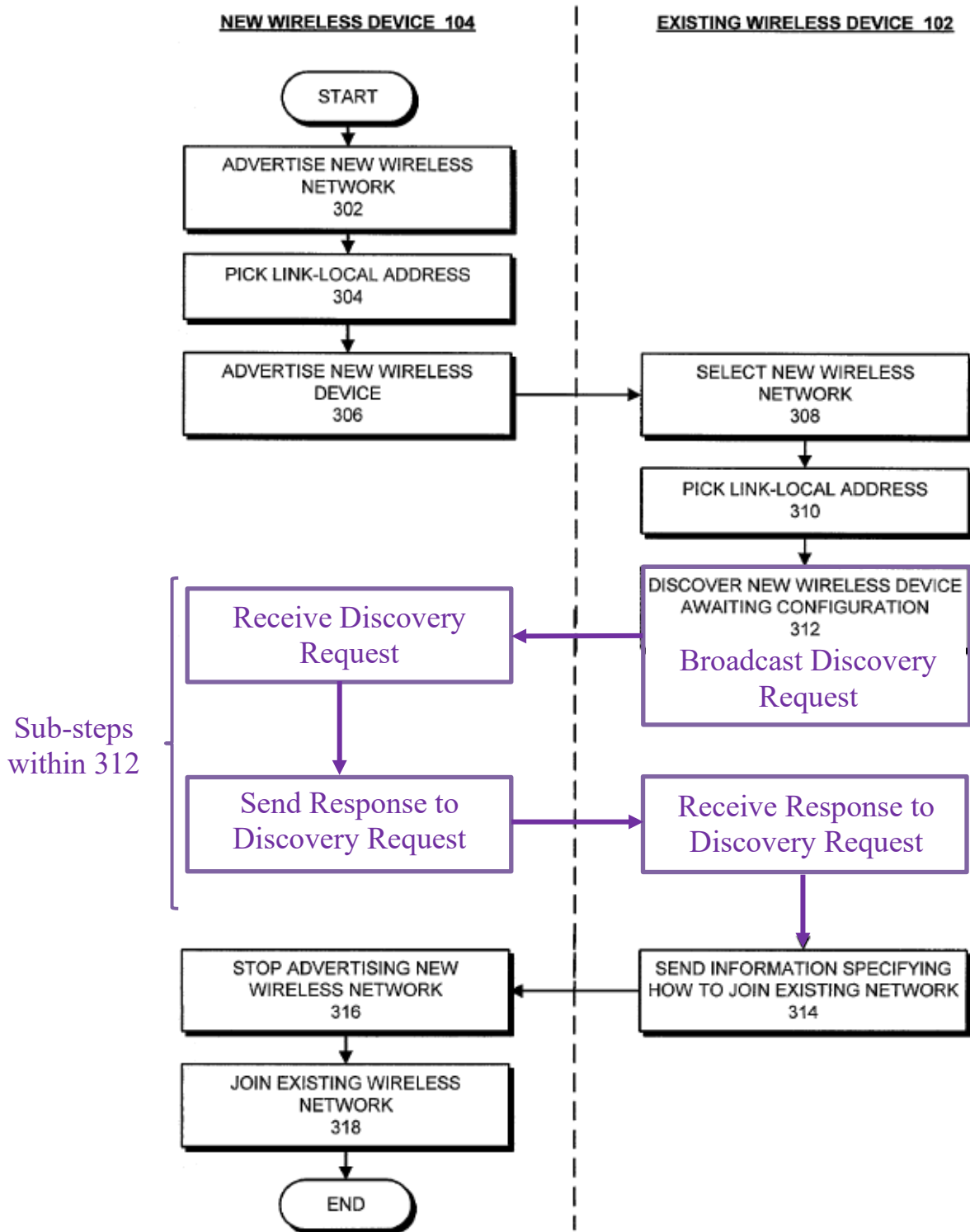


FIG. 3

Cheshire, Fig. 3 (modified; annotated).

126. Cheshire describes or renders obvious that the response to the advertisement occurs while new wireless device 104 is *in the setup mode*. As described above, Cheshire's configuration process occurs when the device is in its setup mode (i.e., after powering on but before configuration is complete).

h. [1e.2(b)]: wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,

127. In my opinion, Cheshire discloses *wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point*.

128. Cheshire's existing wireless network 112 is a WLAN. As Cheshire describes, "[e]xisting wireless network 112 and new wireless network 106 can generally include any type of wireless communication channel through which computing devices can communicate. For example, they can include wireless networks that transmit information through infrared signals or radio frequency signals ... [including] a local area wireless network" Cheshire (EX1005), 3:18-29. Cheshire describes "an existing wireless network 112, which couples together an existing wireless device 102 as well as other wireless devices." EX1005, 2:62-67. A POSITA would have understood that Cheshire therefore discloses a WLAN.

129. Moreover, Cheshire's existing wireless network 112 is a secure WLAN. Cheshire further discloses that the configuration of new wireless device 104 involves sharing an "encryption key to facilitate secure communications across the existing wireless network." Cheshire (EX1005), 2:15-17, 3:45-56. Based on this disclosure, a POSITA would have understood that existing wireless network 112 is a secure WLAN because it requires an "encryption key."

130. A POSITA would have understood or found it obvious that existing wireless network 112 *is defined by an access point*. Cheshire details that "existing wireless network 112 ... can be used to communicate with the Internet." Cheshire (EX1005), 3:26-29. Cheshire further discloses that "a user of the Mac OS™ [on existing wireless device 102] can temporarily switch the 'AirPort' connection to new wireless network 106." Cheshire 4:35-41; *see* Cheshire (EX1005), 5:32-61 (claim 1). A POSITA would have understood that switching an AirPort connection indicates that existing wireless device 102 does not produce existing wireless network 112, rather it is connected to an AirPort device that is separate from a computing device. A POSITA would have understood that both MacOS and Airport are Apple's proprietary products at the relevant priority date and that Airport was Apple's branded implementation of a configuration that would have involved a wireless access point. Accordingly, a POSITA would have

understood that existing wireless network 112 is defined by an access point (e.g., an AirPort device).

131. Additionally, Cheshire describes that wireless networks allow computing devices to “be easily moved to a new location within the building without having to reconfigure the network connection.” Cheshire (EX1005), 1:21-24. There are at least two ways to form wireless networks: ad-hoc (computer-to-computer) communications and infrastructure-based (access point) communications. A POSITA would have known that an access point-based network was common and routine. Because access points are one of two network types, a POSITA would have understood that Cheshire’s existing wireless network 112 is defined by an access point.

132. Therefore, Cheshire discloses or renders obvious [1.e2(b)].

- i. **[1e.2(c): wherein the initial communication path with the computing device does not traverse the access point;**

133. In my opinion, Cheshire discloses *wherein the initial communication path with the computing device does not traverse the access point.*

134. As noted above, Cheshire teaches that “a user of the Mac OS™ [on existing wireless device 102] can temporarily switch the ‘AirPort’ connection to new wireless network 106.” Cheshire (EX1005), 4:35-41. Cheshire further

describes that “the new wireless network and the existing wireless network are different networks.” Cheshire (EX1005), 5:32-61 (claim 1).

135. Cheshire describes that new wireless network 106 is the *initial communication path with the computing device*. For example, Cheshire instructs that “[d]uring operation, new wireless device 104 *initially communicates* with existing wireless device 102 through new wireless network 106 in order to receive configuration information, which allows new wireless device 104 to join existing wireless network 112 as is described below with reference to FIGS. 2 and 3.” Cheshire (EX1005), 3:30-35 (emphasis added). As I detailed above, a POSITA would have known or found it obvious that new wireless network 106 is the *initial communication path* because it is how devices 104 and 102 begin communicating or transmitting information between each other related to the configuration of new wireless device 104. Section X.A.1.g.

136. A POSITA would have understood or found it obvious that the communication between devices 104 and 102 *does not traverse the access point*. As explained above, the initial communication between devices 104 and 102 only occurs over new wireless network 106. Because new wireless device 102 switches from existing wireless network 112 to new wireless network 106 for purposes of configuring new wireless device 104, no messages are being sent through existing wireless network 112. Cheshire (EX1005), 3:30-35, 4:35-41. In fact, new wireless

device 104 does not even have access to existing wireless network 112 until after it has been configured, confirming that the initial communication between devices 104 and 102 takes place **without** traversing the access point. Cheshire (EX1005), 4:35-41. Therefore, a POSITA would have understood that the initial communication does not traverse the access point in existing wireless network 112.

137. Thus, Cheshire discloses or renders obvious [1e.2(c)].

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

138. In my opinion, Cheshire discloses *receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN.*

139. As I detailed above, Figure 3 provides a diagram of Cheshire's configuration process. Looking at step 314, Cheshire describes that existing wireless device 102 sends *via the initial communication path a second message containing network configuration parameters for the secure WLAN* to new wireless device 104. Cheshire (EX1005), 4:53-58.

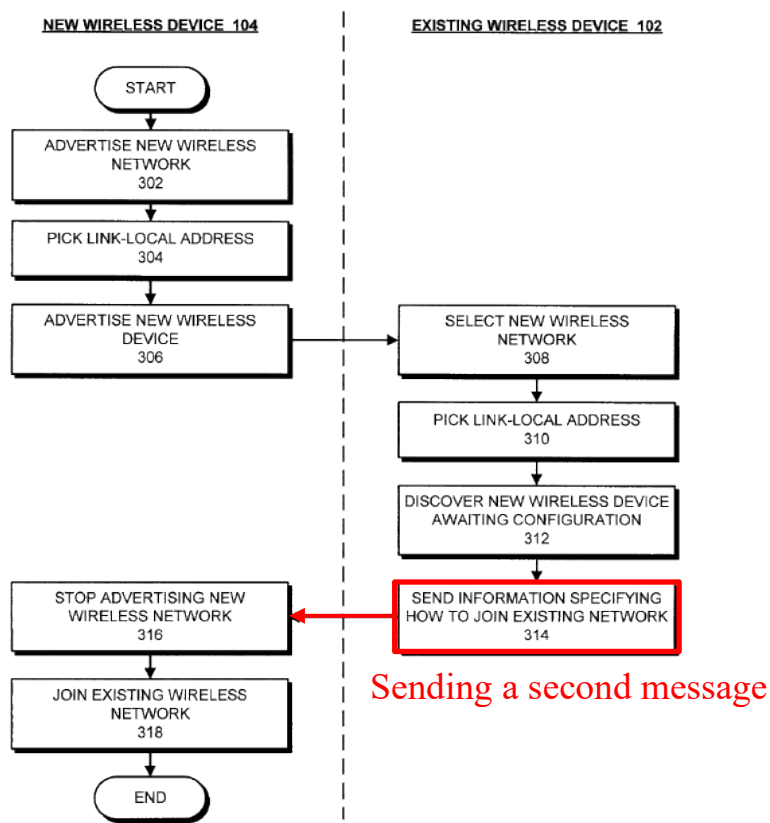


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated).

140. In step 314, existing wireless device sends “configuration information that allows new wireless device 104 to join existing wireless network 112.”

Cheshire (EX1005), 4:53-58. This step (i.e., step 314) occurs **after** existing wireless device 102 has responded to new wireless device 104's first message on new wireless network 106. Cheshire (EX1005), 4:53-58. Because step 314 happens after step 312, a POSITA would have understood it to be a second message.

Moreover, because existing wireless device 102 sends this configuration information to new wireless device 104 which uses this information to join existing wireless network 112, new wireless device 104 receives the information.

141. Cheshire provides that configuration information is sent as a message with packet 200, which contains "a number of pieces of information that new wireless device 104 can use to communicate on existing wireless network 112." Cheshire (EX1005), 3:38-44, Fig. 2. As depicted in Cheshire's Figure 2, this information includes the "name of a network to join 201;" "a key type field 202, which identifies the type of encryption key used by the network;" an "encryption key 203;" and other "standard information related to an Internet Protocol (IP) address." Cheshire (EX1005), 3:38-65.

PACKET 200

NETWORK TO JOIN	201
KEY TYPE	202
KEY	203
IP ADDRESS	204
SUBNET MASK	205
IP GATEWAY ADDRESS	206
DNS SERVER ADDRESS	207

FIG. 2

Cheshire (EX1005), Fig. 2 (annotated). Cheshire thus discloses that existing wireless device 102 sends new wireless device 104 *configuration parameters* in a message that includes *an identifier of the secure WLAN and a security key for the secure WLAN*.

142. Thus, Cheshire discloses or renders obvious [1e.3].

- k. **[1e.4]: using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and**

143. In my opinion, Cheshire discloses *using the network configuration parameters to connect to the secure WLAN that is defined by the access point*.

144. After new wireless device 104 receives packet 200 (i.e., configuration parameters), Cheshire describes that new wireless device 104 stops advertising new wireless network 106 and that “new wireless device 104 ... uses the information contained in packet 200 to join existing wireless network 112.”

Cheshire (EX1005), 4:66-5:2, Fig. 3.

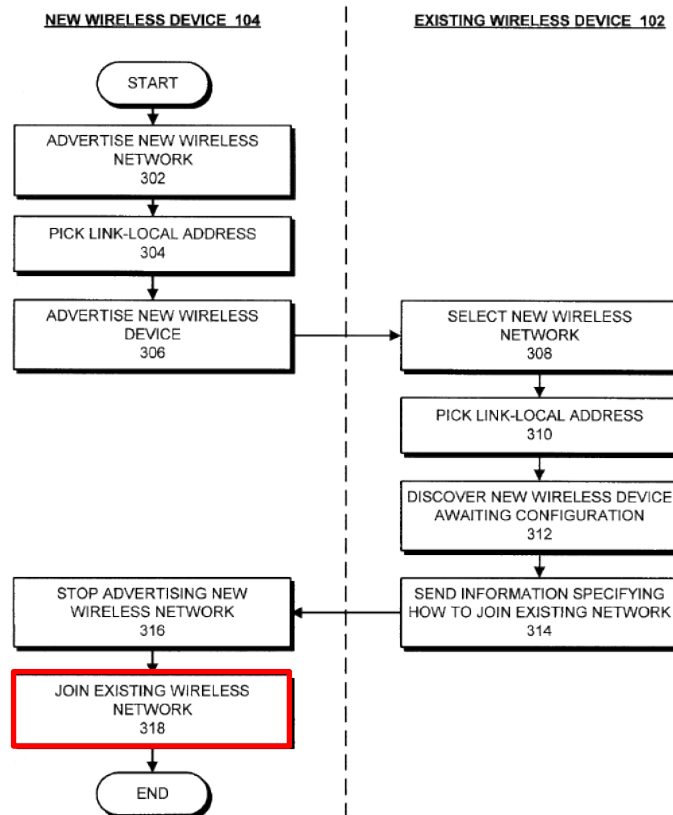


FIG. 3

Cheshire (EX1005), Fig. 3 (annotated).

145. Therefore, Cheshire discloses or renders obvious [1e.4].

- I. **[1e.5]: transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.**

146. In my opinion, Cheshire discloses or at least suggests *transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.*

147. Cheshire states that “new wireless device 104 stops advertising new wireless network 106 (step 316).” Cheshire (EX1005), 4:66-5:2, Fig. 3.

148. Cheshire describes that new wireless device 104 transitions communications to existing wireless network 112 because it “join[s] existing wireless network 112” (step 318). Cheshire (EX1005), 4:66-5:2, Fig. 3. Cheshire details that the purpose of configuring new wireless device 104 with packet 200 is so that “new wireless device 104 can use to communicate on existing wireless network 112.” Cheshire (EX1005), 3:45-47. Based on these disclosures, a POSITA would have known that when new wireless device 104 joins existing wireless network 112, it does so to “communicate on existing wireless network 112.” Cheshire (EX1005), 3:45-47. This is what a POSITA would have considered a transition because new wireless device 104 moves from one network to another.

149. Therefore, Cheshire discloses or renders obvious [1e.5].

2. Dependent Claims 2-3, 7-8, 10, 12

150. In my opinion, Cheshire further discloses or renders obvious Claims 2-3, 7-8, 10, and 12 for the reasons described below. Moreover, I believe that the dependent claims further do not recite anything that was not already being done in the art and/or that a skilled artisan would not have known how to do.

- a. Claim 2: The playback device of claim 1, wherein the triggering event comprises one of (a) powering on the playback device or (b) receiving user input via a physical interface of the playback device.**

151. In my opinion, Cheshire discloses or renders obvious the additional limitations of claim 2.

152. As I explained for [1e.1] above, Cheshire teaches that “new wireless device 104 ... powers up.” Cheshire (EX1005), 4:7-15; *see also* Cheshire (EX1005), 4:20-25; X.A.1.f. A POSITA would have found claim 2 obvious for the same reasons discussed above with [1e.1] because powering up new wireless device 104 begins its configuration process. Section X.A.1.f.

- b. Claim 3: The playback device of claim 1, wherein the computing device comprises a controller device of a networked audio system.**

153. In my opinion, Cheshire discloses or renders obvious the additional limitations of claim 3.

154. Cheshire discloses that existing wireless device 102 is a “controller device,” while new wireless device 104 is an “audio output device.” Cheshire (EX1005), 3:3-14. A POSITA would have known that controller devices were well-known and routinely used to control audio devices. For example, Spurgat discloses a “computing platform 103 [that] may be used to control mobile digital audio players 115 and fixed digital audio players 116” over a network.

Spurgat (EX1007), ¶¶34-36. Richenstein describes the use of different types of devices that control audio devices. Richenstein (EX1010), ¶¶162-166, 174-176. Accordingly, a POSITA would have understood or found it obvious that existing wireless device 102 would be *a controller device of a networked audio system*. Cheshire (EX1005), 3:3-14.

155. I believe that a POSITA would have understood that an “audio output device” connected to “a device controller” constitutes a *networked audio system* because the two devices are connected over existing wireless network 112. Moreover, it is my opinion that a POSITA would have understood that an audio system requires at least one audio device and one controller, as I described above.

156. Although it is my opinion that Cheshire discloses claim 3, it is also my opinion that a POSITA would have found claim 3 obvious over Cheshire’s teachings above. Cheshire (EX1005), 3:3-14. For instance, because Cheshire discloses that the configuration of new wireless device 104 is an audio output device and that existing wireless device 102 is a device controller, a POSITA would have found it obvious to configure device 104 to be controlled by device 102 over existing wireless network 112 because remote controlling audio devices were known and common. For example, Spurgat and Richenstein both disclose the use of controllers to control networked audio systems. Spurgat (EX1007), ¶¶34-36; Richenstein (EX1010), ¶¶162-166, 174-176. Moreover,

making an audio system with an audio output device and a controller would have made controlling the audio device simpler and improved the user experience because a user could control the audio device from a distance.

c. Claims 7 and 8

157. Claims 7 and 8 of the '883 patent recite similar language related to what type of networked audio system exists after a playback device is connected to the secure WLAN. As I described above, a networked audio system involves connecting at least an audio device and a controller over a network. Section X.A.2.b. When an audio device joins a network after being configured, as Cheshire discloses, two things could happen. The audio device is either the first audio device to join the network or is not the first audio device to join the network—in other words, making it the second device, third device, etc. on the network. In the first instance, a new networked audio system is established, whereas in the latter example, the audio device joins an existing networked audio system.

- i. **Claim 7: The playback device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: after connecting to the secure WLAN, establishing a new networked audio system on the secure WLAN.**

158. In my opinion, Cheshire renders obvious the additional limitations of claim 7.

159. Cheshire renders obvious claim 7 because it teaches connecting “audio output device” (i.e., new wireless device 104) to “a device controller” (i.e., existing wireless network device 102) over existing wireless network 112.

Cheshire (EX1005), 3:3-14; Sections X.A.1.j, X.A.1.l. A POSITA would have found it obvious that a *networked audio system* is created because, after existing wireless device 102 (i.e., a device controller) is used to configure new wireless device 104 (i.e., an audio output device), the two devices are intended to “communicate across a wireless network,” which creates an audio system.

Cheshire (EX1005), 1:28-30, 2:15-17, 3:3-14, 3:45-47.

160. It would have been obvious to a POSITA that this constitutes a *new networked audio system* when new wireless device 104 is the first device to join existing wireless network 112. Moreover, it is also my opinion that a POSITA would have found it obvious to try to make a *new networked audio system* because

there are limited design options when connecting an audio device to a network—either new or existing. A POSITA would have understood that establishing a new networked audio system was within the level of skill at the time of invention and would not have involved any exploration of new technology.

- ii. **Claim 8: The playback device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: after connecting to the secure WLAN, joining an existing networked audio system operating on the secure WLAN.**

161. In my opinion, Cheshire renders obvious the additional limitations of claim 8.

162. As I detailed above, Cheshire teaches connecting “audio output device” (i.e., new wireless device 104) to “a device controller” (i.e., existing wireless network device 102) over existing wireless network 112. Section X.A.2.c.i; Cheshire (EX1005), 3:3-14, 1:28-30, 2:15-17, 3:45-47. Moreover, Cheshire describes that other wireless devices may exist on network 112. Cheshire (EX1005), 2:64-3:2. Based on these disclosures, a POSITA would have known that adding new wireless device 104 (i.e., audio output device) to a network with other audio output devices would have constituted joining an existing networked audio system. It would have been obvious to a POSITA to make or to try to make a *new*

networked audio system because there are limited design options when connecting an audio device to a network—either new or existing. Selecting one of these options was within the level of skill at the time of invention and would not have involved any exploration of new technology. Therefore, given the limited options, a POSITA would have found it obvious to join new wireless device 104 to an *existing networked audio system*.

d. Claim 10: The playback device of claim 1, wherein communicating with the computing device via the secure WLAN comprises receiving a command related to playback of audio content.

163. In my opinion, Cheshire discloses or renders obvious the additional limitations of claim 10.

164. As I previously detailed above, a POSITA would have known or found it obvious that the purpose of an “audio output device” was to play audio content because an audio output device was designed to play sound. Section X.A.2.c. Based on the ’883 patent’s disclosures, it is also my opinion that a POSITA would have understood that “audio content” is the actual sound that is played on a playback device. The specification and the claims lead me to understand that audio content is the actual sound derived from an audio source. For instance, the specification discloses that “audio sources are in digital format” giving an example of an audio source as a “song track.” EX1001, 5:51-54, 7:63-65.

The specification further provides that playback devices “may share or exchange one or more audio sources ... [and] distribute audio and/or reproduce sound.”

EX1001, 9:15-22, 6:6-20 (“All devices ... may be configured to download and store audio sources or receive streaming audio sources.”). Although the ’883 patent does not use the phrase “audio content” in the specification, these disclosures would have led a POSITA to conclude that an audio source is the source of the sound being played but not actual sound itself. The claims also support my opinion because, for example, the ’883 patent’s claim 11 notes that audio content is different from an audio source, which recites “retrieving the audio content from the audio source.” EX1001, 19:15-25 (claim 11). As such, a POSITA would have understood that audio content is the actual sound that is being played while an audio source is the source of the sound.

165. Cheshire teaches that “audio output device” (i.e., new wireless device 104) is configured to “communicate across a wireless network” with “a device controller” (i.e., existing wireless network device 102) over existing wireless network 112. Section X.A.2.c; Cheshire (EX1005), 1:28-30, 3:3-14, 2:15-17, 3:45-47. In my opinion, based on these disclosures, a POSITA would have understood that the purpose of existing wireless device 102 would have been to direct or control the output of sound from new wireless device 104.

166. A POSITA would have understood that existing wireless device 102 (i.e., a device controller) provides commands to new wireless device 104 over existing wireless network 112. For example, it was well known that the purpose of a controller was to provide commands to devices. For example, as early as the 1970s, wireless remotes were configured to send commands to the various devices they controlled, including audio equipment. Stereo Review 1991 (EX1017), 62; US 6,489,986 B1 (EX1018), 4:18-21, 6:12-17 (“remote control 204 ... generates appropriate command signals for transmission”); US 5,182,552 (EX1019), 10:34-47. Accordingly, it is my opinion that wireless device controllers were well-known within the art well before the invention of the ’883 patent.

167. Wireless controllers provided, and still to this day provide, a user with a way to control an audio device. For example, controllers were used to select, play, pause, fast forward, rewind, skip, and stop audio content (e.g., music). Controllers were also used to change settings on audio devices, such as volume. A POSITA would have understood that these examples constituted commands related to the playback of audio content because changing a song or turning up the volume on a device affects the audio coming out of new wireless device 104.

168. Based on this understanding of the art, it is my opinion that a POSITA would have understood that when existing wireless device 102 sends a command,

new wireless device 104 receives that command because the purpose of a controller would have been to direct operations of the new wireless device 104.

Cheshire (EX1005), 1:28-30, 3:3-14, 2:15-17, 3:45-47.

169. Accordingly, Cheshire renders obvious claim 10.

- e. **Claim 12: The playback device of claim 1, wherein the second message comprises a command for the playback device to adopt the network configuration parameters.**

170. In my opinion, Cheshire discloses or renders obvious the additional limitations of claim 12.

171. Cheshire teaches that existing device 102 sends a message with “packet 200 contains configuration information that allows new wireless device 104 to join existing wireless network 112.” Cheshire (EX1005), 4:53-58; Section X.A.1.j. As I discussed in [1e.3] above, Cheshire describes and renders obvious that existing wireless device 102 sends this packet 200 in a second message to new wireless device 104. Cheshire (EX1005), 4:53-58; Section X.A.1.j. It is further my opinion that a POSITA would have found it obvious that the communication that sends packet 200 includes a *command to adopt the network configuration parameters*.

172. A POSITA would have understood that Cheshire’s disclosures about sending packet 200 would have involved a command to adopt the network

configuration parameters. A POSITA would have understood that packet 200 is not merely informational. It is intended to cause the new wireless device to act on the data. Indeed, computers need to be told what to do with the information that they are given in order to use that information. The fact that new wireless device uses the information contained in packet 200 (e.g., SSID and security key) and joins existing wireless network (step 318) indicates that the new wireless device acts on the packet 200 and produces the expected outcome, which would not have been possible without some instructions associated with the packet 200 to do so. A POSITA would have interpreted such instructions to be a command based on the system's behavior.

173. Accordingly, Cheshire renders obvious claim 12.

3. Claim 14

174. In my opinion, Cheshire discloses or renders obvious claim 14 for the same reasons discussed above for claim 1. Section X.A.1. While claim 1 is directed to a playback device with a “non-transitory, computer-readable medium” that stores program instructions related to the setup of the playback device, claim 14 is directed to a “non-transitory, computer-readable storage medium” that stores program instructions related to the setup of a playback device. EX1001, 17:61-18:29 (claim 1), 19:41-20:4 (claim 14).

- a. **[14Pre] A non-transitory, computer-readable storage medium, wherein the non-transitory computer-readable storage medium is provisioned with program instructions that are executable to cause a playback device to perform functions comprising:**

175. In my opinion, Cheshire discloses or renders obvious [14Pre] for the same reasons discussed above for [1c]-[1d]. The limitations in [14Pre] are nearly identical to those found in [1c]-[1d], as I demonstrate in the chart below.

Claim 1	Claim 14
[1Pre] A playback device comprising	
[1a] a network interface that is configured to provide an interconnection with at least one data network;	
[1b] at least one processor;	
[1c] a non-transitory computer-readable medium; and	[14Pre] A non-transitory, computer-readable storage medium,
[1d] program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:	[14Pre] wherein the non-transitory computer-readable storage medium is provisioned with program instructions that are executable to

Claim 1	Claim 14
	cause a playback device to perform functions comprising:

176. In addition to the teachings I discussed in Sections X.A.1.a-X.A.1.e, Cheshire explicitly teaches and claims “a computer-readable storage medium.” Cheshire (EX1005), 2:48-59, 6:62-8:39 (claims 11-20); Sections X.A.1.a-X.A.1.e. Indeed, Cheshire’s claims 11-20 are directed to “[a] computer-readable storage medium storing instructions that when executed by a computer cause the computer to perform a method for using reverse advertising to configure a new wireless device to join an existing wireless network, wherein the computer-readable storage medium includes magnetic and optical storage devices, disk drives, magnetic tape, CDs (compact discs)[,] and DVDs (digital versatile discs or digital video discs), the method comprising” Cheshire (EX1005), 6:62-7:29. In other words, much like the ’883 patent, Cheshire describes and claims that its method is stored on a “computer-readable storage medium.” Based on these teachings, a POSITA would have found [14Pre] obvious.

177. I understand that claim 14 of the ’883 patent includes the word “storage” in “computer-readable storage medium” while claim 1 does not include “storage.” A POSITA would have understood that these terms are directed to the

same type of medium despite the minor difference. For example, the subsequent claim elements are identical and are both related to storage of instructions. *See* below Sections X.A.1.a-X.A.1.e. Indeed, the inclusion of “storage” does not change the purpose of claim 1’s “computer-readable medium” because it also stores program instructions. Even if there is a difference between the two, it is my opinion that a POSITA would have found Cheshire’s teachings “a computer-readable storage medium” applicable in both instances.

178. Thus, Cheshire renders obvious [14Pre].

- b. [14a]: detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;**

179. In my opinion, Cheshire discloses or renders obvious [14a] for the same reasons discussed above for [1e.1]. *See* Section X.A.1.f. The limitations in [14a] are nearly identical to those found in [1e.1], as I demonstrate in the chart below.

Claim 1	Claim 14
[1e.1] detecting a triggering event that causes the playback device to enter a setup mode in which the playback device	[14a] detecting a triggering event that causes the playback device to enter a setup mode in which the playback

Claim 1	Claim 14
transmits at least a first message indicating that the playback device is available for setup;	device transmits at least a first message indicating that the playback device is available for setup;

180. Therefore, Cheshire discloses or renders obvious [14a].

- c. **[14b]: while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device, wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, wherein the initial communication path with the computing device does not traverse the access point;**

181. In my opinion, Cheshire discloses or renders obvious [14b] for the same reasons discussed above for [1e.2(a)]-[1e.2(c)]. *See* Sections X.A.1.g-X.A.1.i. The limitations in [14b] are nearly identical to those found in [1e.2(a)]-[1e.2(c)], as I demonstrate in the chart below.

Claim 1	Claim 14
<p>[1e.2(a)] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device,</p>	<p>[14b] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device,</p>
<p>[1e.2(b)] wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,</p>	<p>[14b] wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,</p>
<p>[1e.2(c)] wherein the initial communication path with the computing device does not traverse the access point;</p>	<p>[14b] wherein the initial communication path with the computing device does not traverse the access point;</p>

182. Thus, Cheshire discloses or renders obvious [14b].

- d. **[14c]: receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;**

183. In my opinion, Cheshire discloses or renders obvious [14c] for the same reasons discussed above for [1e.3]. *See* Section X.A.1.j. The limitations in [14c] are nearly identical to those found in [1e.3], as I demonstrate in the chart below.

Claim 1	Claim 14
[1e.3] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;	[14c] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;

184. Thus, Cheshire discloses or renders obvious [14c].

- e. **[14d]: using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and**

185. In my opinion, Cheshire discloses or renders obvious [14d] for the same reasons discussed above for [1e.4]. *See* Section X.A.1.k. The limitations in [14d] are nearly identical to those found in [1e.4], as I demonstrate in the chart below.

Claim 1	Claim 14
[1e.4] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and	[14d] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and

186. Therefore, Cheshire discloses or renders obvious [14d].

- f. **[14e]: transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.**

187. In my opinion, Cheshire discloses or renders obvious [14e] for the same reasons discussed above for [1e.5]. *See* Section X.A.1.l. The limitations in [14e] are nearly identical to those found in [1e.5], as I demonstrate in the chart below.

Claim 1	Claim 14
<p>[1e.5] transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.</p>	<p>[14e] transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.</p>

188. Therefore, Cheshire discloses or renders obvious [1e.5].

4. Dependent Claim 15

189. In my opinion, Cheshire discloses or renders obvious claim 15 for the same reasons discussed above for claim 2. *See* Section X.A.2.a. The limitations in claim 15 are nearly identical to those found in claim 2, as I demonstrate in the chart below.

Claim 2	Claim 15
<p>2. The playback device of claim 1, wherein the triggering event comprises one of (a) powering on the playback</p>	<p>15. The non-transitory, computer-readable storage medium of claim 14, wherein the triggering event</p>

Claim 2	Claim 15
device or (b) receiving user input via a physical interface of the playback device.	comprises one of (a) powering on the playback device or (b) receiving user input via a physical interface of the playback device

190. As discussed with claim 2 and [1e.1] above, Cheshire discloses or renders obvious claim 15 because it teaches “new wireless device 104 ... powers up.” Cheshire (EX1005), 4:7-15, 4:20-25; *see supra* Sections X.A.1.f, X.A.2.a.

191. Therefore, Cheshire discloses or renders obvious claim 15.

5. Claim 20

192. In my opinion, Cheshire discloses or renders obvious claim 20 for the same reasons discussed above with claim 1. *See supra* Section X.A.1. While claim 1 is directed to a playback device that executes steps to configure itself to join a secure WLAN defined by an access point, claim 20 is directed to the method that the playback device of claim 1 executes. Because the program instructions in claim 1 are nearly identical to the method limitation recited in claim 20, it is my opinion that claim 20 is obvious for the same reasons I discuss with claim 1. *See supra* Section X.A.1.

a. [20Pre] A method comprising:

193. In my opinion, Cheshire discloses or renders obvious [20Pre] for the same reasons discussed above for [1d]. *See* Section X.A.1.e. While [20Pre] is a preamble reciting a method, [1d] recites “program instructions ... [that] perform functions ...” It is my opinion that “perform[ing] functions” steps from claim 1 would be executing a method as the remaining limitations of claim 20 provide the same steps, as I detail below.

Claim 1	Claim 20
[1d] program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:	[20Pre] A method comprising:

194. Thus, Cheshire renders obvious [20Pre].

- b. **[20a] detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;**

195. In my opinion, Cheshire discloses or renders obvious [20a] for the same reasons discussed above for [1e.1]. *See* Section X.A.1.f. The limitations in [20a] are nearly identical to those found in [1e.1], as I demonstrate in the chart below. Because the limitations are nearly identical, my discussion of Cheshire’s disclosures and the obviousness of [1e.1] apply equally here. *See* Section X.A.1.f.

Claim 1	Claim 20
[1e.1] detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;	[20a] detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;

196. Thus, Cheshire renders obvious [20a].

- c. **[20b] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device, wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, wherein the initial communication path with the computing device does not traverse the access point;**

197. In my opinion, Cheshire discloses or renders obvious [20b] for the same reasons discussed above for [1e.2(a)]-[1e.2(c)]. *See* Sections X.A.1.g-X.A.1.i. The limitations in [20b] are nearly identical to those found in [1e.2(a)]-[1e.2(c)], as I demonstrate in the chart below. Because the limitations are nearly identical, my discussion of Cheshire’s disclosures and the obviousness of [1e.2(a)]-[1e.2(c)] apply equally here. *See* Sections X.A.1.g-X.A.1.i.

Claim 1	Claim 20
[1e.2(a)] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device,	[20b] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device,

Claim 1	Claim 20
[1e.2(b)] wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,	[20b] wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,
[1e.2(c)] wherein the initial communication path with the computing device does not traverse the access point;	[20b] wherein the initial communication path with the computing device does not traverse the access point;

198. Thus, Cheshire renders obvious [20b].

- d. **[20c] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;**

199. In my opinion, Cheshire discloses or renders obvious [20c] for the same reasons discussed above for [1e.3]. *See* Section X.A.1.j. The limitations in [20c] are nearly identical to those found in [1e.3], as I demonstrate in the chart below. Because the limitations are nearly identical, my discussion of Cheshire’s disclosures and the obviousness of [1e.3] apply equally here. *See* Section X.A.1.j.

Claim 1	Claim 20
<p>[1e.3] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;</p>	<p>[20c] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;</p>

200. Thus, Cheshire renders obvious [20c].

- e. **[20d] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and**

201. In my opinion, Cheshire discloses or renders obvious [20d] for the same reasons discussed above for [1e.4]. *See* Section X.A.1.k. The limitations in [20d] are nearly identical to those found in [1e.4], as I demonstrate in the chart below. Because the limitations are nearly identical, my discussion of Cheshire’s disclosures and the obviousness of [1e.4] apply equally here. *See* Section X.A.1.k.

Claim 1	Claim 20
[1e.4] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and	[20d] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and

202. Thus, Cheshire renders obvious [20d].

- f. **[20e] transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.**

203. In my opinion, Cheshire discloses or renders obvious [20e] for the same reasons discussed above for [1e.5]. *See* Section X.A.1.1. The limitations in [20e] are nearly identical to those found in [1e.5], as I demonstrate in the chart below. Because the limitations are nearly identical, my discussion of Cheshire’s disclosures and the obviousness of [1e.5] apply equally here. *See* Section X.A.1.1.

Claim 1	Claim 20
[1e.5] transitioning from communicating with the computing device via the initial communication path to communicating with the	[20e] transitioning from communicating with the computing device via the initial communication path to communicating with the

Claim 1	Claim 20
computing device via the secure WLAN that is defined by the access point.	computing device via the secure WLAN that is defined by the access point.

204. Thus, Cheshire renders obvious [20e].

B. Ground 2: Cheshire and Meenan Render Obvious Claims 1-10, 12, 14-18, 20

1. Claim 1

a. [1Pre]-[1e.2(a)]

205. In my opinion, Cheshire discloses or renders obvious [1Pre]-[1e.2(a)] for the same reasons discussed above in Ground 1. *See supra* Section X.A.1.1.

b. [1e.2(b)]: wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point,

206. Although I believe that Cheshire discloses or renders obvious wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, as described above in Ground 1 (Section X.A.1.h), it is also my opinion that Cheshire and Meenan alternatively render obvious [1e.2(b)].

207. As described above, Cheshire discloses that existing wireless device 102 operates on existing wireless network 112, a “local area wireless

network.” Cheshire (EX1005), 3:18-26, 2:64-67; Section X.A.2.e. A POSITA would have understood that existing wireless network 112 is a secure WLAN because packet 200 includes an encryption key, such as a WEP, that new wireless device 104 needs to join and communicate over existing wireless network 112. Cheshire (EX1005), 3:50-56; Ladas (EX1013), ¶¶44-48 (describing WLANs secured with WEPs).

208. Meenan discloses a process of configuring “wireless devices” using a “home-networking gateway.” Meenan (EX1006), 17:62-20:48. Meenan’s configuration process is summarized in Figure 7, which I reproduce below:

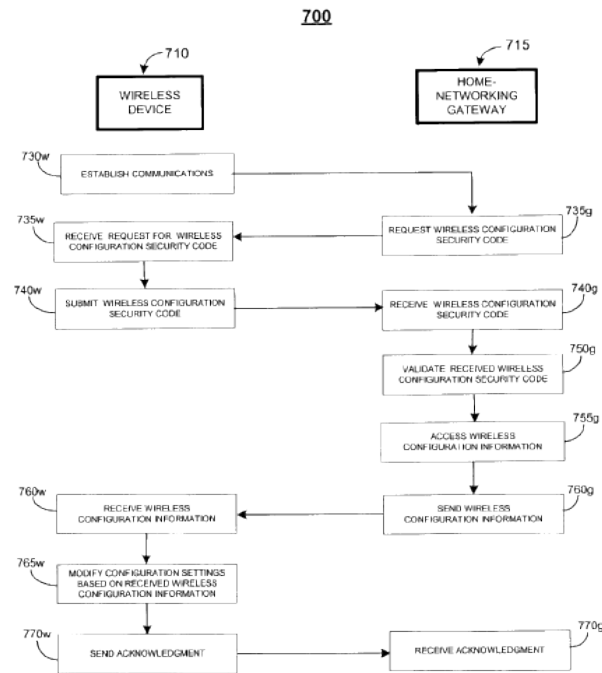


FIG. 7

Meenan (EX1006), Fig. 7. This process is designed to move wireless devices onto a wireless home network defined by a “wireless access point 112 h [that] is connected to home-networking gateway 115 through the wired network and [that] transmits communications received from wireless devices to the home-networking gateway 115.” Meenan 4:1-6, 3:42-4:1; *see also* Meenan (EX1006), 1:26-50.

209. A POSITA would have understood that Meenan discloses a WLAN. Meenan describes that “[t]he devices 112, the home-networking gateway 115, and the communication device 119 may be included in a home network 110 physically located in a personal residence.” Meenan (EX1006), 2:58-62. A POSITA would have understood that home network 110, which connects Meenan’s devices, is a WLAN because it is a network that connects wireless devices within a defined space. Meenan (EX1006), 4:9-20. Although Meenan discloses the use of some wired connections, a POSITA would have understood that network 110 is a wireless network because (1) the purpose of Meenan is to provide wireless configuration, and (2) Meenan describes how at least “some of the other devices ... communicate with the home-networking gateway 115 using a wireless access point 112 h .” Meenan (EX1006), 3:59-61; *see also* Meenan (EX1006), 1:24-35. Meenan further provides that “wireless communication pathway may use various protocols to communicate from a wireless devices[sic] to a wireless access

point 112*h*,” listing IEEE 802.11 and Bluetooth as options. Meenan (EX1006), 4:9-20. Accordingly, Meenan describes a WLAN.

210. A POSITA would have further understood that Meenan’s home network 110 is *a secure WLAN*. As depicted in Figure 7 above, an operator enters a security code to obtain wireless configuration information. Meenan (EX1006), 17:62-20:51. The configuration information includes “security key (e.g., a WEP key), a network name (such as a SSID), a list of devices permitted to access the network, and other information needed to configure the device to work on the wireless home network.” Meenan (EX1006), 19:31-40. A POSITA would have understood that a security key is needed for secure networks, so a POSITA would therefore have understood that Meenan’s describes a *secure WLAN*.

211. Meenan further discloses that home network 110 is *defined by an access point*. For example, Meenan teaches that communications over the network happen through wireless access point 112*h*, rather than through device-to-device communications. *See, e.g.*, Meenan (EX1006), 2:55-3:2, 3:59-4:8. Meenan further provides that wireless device 710 “is capable of communicating with a home network, for example, by communicating with a wireless access point ... 112*h* ... or with a home-networking gateway that includes wireless communication capabilities.” Meenan (EX1006), 18:46-51; *see* Meenan (EX1006), 17:62-20:51 (describing process of device 710 configuration), 20:49-51 (“a wireless access

point or other device may perform the functions described as being performed by the home-networking gateway 715”). Because Meenan describes how network traffic is directed through wireless access point 112h, it discloses a *secure WLAN defined by an access point*.

i. Motivation to Combine with a Reasonable Expectation of Success

212. Although I believe that Cheshire discloses or renders obvious *a secure wireless local area network (WLAN) that is defined by an access point*, as described above in Ground 1 (*see supra* Section X.A), it is also my opinion that Cheshire and Meenan alternatively render obvious this limitation.

213. In my opinion, a POSITA would have been motivated with a reasonable expectation of success to implement Cheshire’s device and configuration process on a secure WLAN defined by an access point as Meenan describes. A POSITA would have been motivated to do so because Cheshire and Meenan both describe wireless devices with similar functions and uses. As I detailed above, Cheshire and Meenan disclose wireless devices that obtain configuration information from another device. *Compare* Cheshire (EX1005), 4:6-5:2, Fig. 3, *with* Meenan (EX1006), 17:62-20:51, Fig. 7. Cheshire and Meenan further both detail that their configuration methods are used when setting up different wireless devices, including audio output devices (Cheshire) and stereo

systems (Meenan). *Compare* Cheshire (EX1005), 3:3-14, *with* Meenan (EX1006), 3:28-42. Moreover, Cheshire and Meenan also both rely on configuration processes that occur over a secure connection. *Compare* Cheshire (EX1005), 4:59-65, *with* Meenan (EX1006), 19:7-46. And both references further describe that a WEP is included in their respective configuration methods. *Compare* Cheshire (EX1005), 3:50-56, *with* Meenan (EX1006), 19:36-40. While Meenan suggest that process 700 is advantageous because it prevents configuration information from being broadcast on a wireless network (Meenan (EX1006), 20:43-48), a POSITA would not have found this to be a concern with Cheshire because Cheshire suggests the use of a secure communication to “keep the information in packet 200 private.” Cheshire (EX1005), 4:59-65. Based on these similarities, a POSITA would have considered the references’ combined teachings.

214. Although I believe that a POSITA would have found it obvious that Cheshire’s WLAN is defined by an access point, a POSITA would have further found this limitation obvious over Meenan’s express disclosure defining a typical WLAN with an access point. Cheshire (EX1005), 3:24-27, 4:10-15; Meenan (EX1006), 4:9-20.

215. A POSITA would have been motivated to supplement Cheshire’s WLAN disclosure with Meenan’s express disclosure that a WLAN uses an access point because, as I noted above, both references describe similar networks and

provide methods of configuring devices to join those networks. Meenan merely provides additional implementation details and descriptions of WLANs, all of which would have been known and readily understood in the art at the time.

Meenan (EX1006), 4:9-14, 17:62-20:48.

216. A POSITA further would have been motivated to use Cheshire's devices on a secure WLAN defined by an access point, as disclosed expressly by Meenan (EX1006), because there were two common ways of setting up a WLAN—through an ad-hoc (peer-to-peer) network or through an infrastructure (access point) network. Indeed, the '883 patent confirms the art, stating that, when setting up a network, “[t]here are two choices 502, Access Point (infrastructure) and Computer-to-Computer (Ad Hoc). The distinction between these two types of network is a common knowledge to the IT professionals” EX1001, 1:58-63. A POSITA would have at least been obvious to try implementing device 102 on Meenan's WLAN, expressly defined by an access point, at least because (1) Cheshire already suggests using a WLAN and doing so would have been one of only two well-known options, and (2) the implementation does not explore new technology. Indeed, no new form of connection or network is being made with this implementation. A POSITA would have further been motivated to use a secure WLAN defined by an access point because they were common types of networks.

217. A POSITA would have had a reasonable expectation of success in supplementing Cheshire's system with Meenan's express recitation of a secure WLAN defined by an access point because doing so would have been routine and only required routine skill in the art to do so. For example, a POSITA would have understood that operating a computing device on a secure WLAN defined by an access point was common knowledge and already suggested by Cheshire and Meenan. *See supra* Sections X.A.1.g-X.A.1.h (discussing Cheshire's WLAN); Meenan (EX1006), 4:9-14, 17:62-20:48. Moreover, a POSITA would have had a reasonable expectation of success because the modification would have been no more than a simple substitution of one known element (i.e., the secure wireless network disclosed in Cheshire) for another (i.e., the secure WLAN in Meenan) to yield predictable results. A POSITA would also reasonably expect success in using a known technique (i.e., networking using an access point) to improve similar devices (i.e., Cheshire's device/network in the same way).

- c. **[1e.2(c)]: wherein the initial communication path with the computing device does not traverse the access point;**

218. Although I believe that Cheshire discloses or renders obvious *wherein the initial communication path with the computing device does not traverse the access point*, as described above in Ground 1 (*see supra* Section X.A.1.i), it is also my opinion that Cheshire and Meenan alternatively render obvious [1e.2(c)].

219. As I detailed above, Meenan discloses a configuration process 700 outlined in Figure 7.

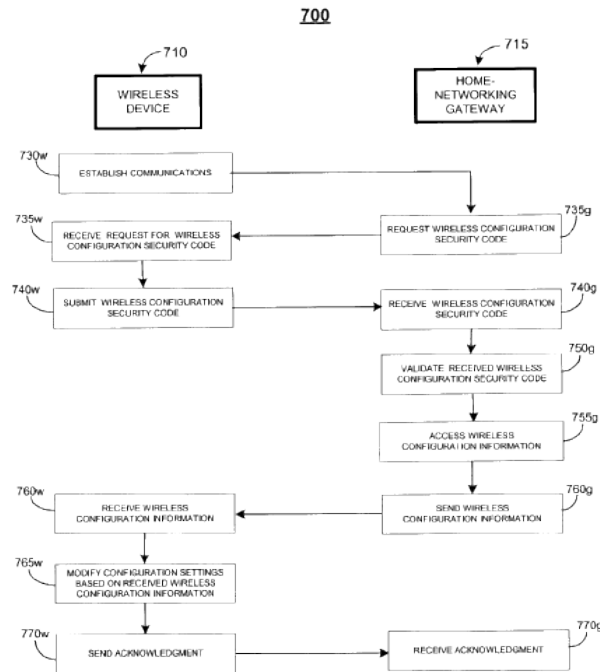


FIG. 7

Meenan (EX1006), Fig. 7. This configuration process “begins when the wireless device 710 establishes communications over the wired communications pathway with the home-networking gateway 715 (step 730w).” Meenan (EX1006), 18:64-66. Through a series of steps, home-networking gateway 715 provides wireless device 710 with the configuration information that wireless device 710 needs to join home network 110. Meenan (EX1006), 17:62-20:48. After wireless device 710 is configured, it is able to communicate wirelessly through access point 112h. Meenan (EX1006), 18:46-51.

220. Based at least on these disclosures from Meenan (EX1006), a POSITA would have understood that configuration process 700 that occurs through Meenan's wired communications pathway *does not traverse the access point*. First, a POSITA would have had this understanding because Meenan's configuration process 700 does not involve an access point. Second, a POSITA would have known that process 700 does not traverse an access point because Meenan differentiates between embodiments that involve an access point and those that do not. Meenan (EX1006), 19:2-6 ("a wire specifically designed to connect a wireless access point to a home-networking gateway and not designed for general network communications"), 20:49-51 ("wireless access point or other device may perform the functions described as being performed by the home-networking gateway 715"). Accordingly, Meenan discloses a configuration process that does not traverse an access point.

i. Motivation to Combine with a Reasonable Expectation of Success

221. In my opinion, a POSITA would have implemented Cheshire's wireless configuration method without traversing an access point as Meenan describes. I believe that a POSITA would have had a motivation to combine with a reasonable expectation of success for at least the same reasons I provided above.

222. It is also my opinion that a POSITA would have been motivated to implement Cheshire's configuration process without traversing an access point because both references instruct that their configuration processes occur on separate networks from those that the new devices are joining. Cheshire (EX1005), 4:6-5:2; Meenan (EX1006), 17:62-20:51. A POSITA would have not wanted to include the access point during configuration in this process because a POSITA would have wanted to keep any extra or unsecure communications separate from an access point to avoid any risk of tainting the secure communication on the network.

223. Although Meenan describes that the initial communication occurs over a wired connection, a POSITA still would have found these teachings applicable to Cheshire's configuration process because the art was moving away from wired connections to wireless ones, wireless connections can be configured to accomplish the same goal as wired connections, and wireless technologies were well known. Therefore, a POSITA would have been motivated to not traverse an access point during configuration.

224. In addition to the reasons I noted above, a POSITA would have had a reasonable expectation of success in implementing Cheshire's wireless configuration process without traversing an access point as in Meenan. For instance, such a combination would have been an expected success because, as

Meenan and Cheshire describe, it was known that device configuration can occur on one network and then be moved to another. Cheshire (EX1005), 4:10-5:2; Meenan (EX1006), 17:62-20:48; Rector (EX1021), ¶¶22-30; Ladas (EX1013), ¶¶38-45. Moreover, the combination does not require any physical modifications to Cheshire's audio output device or require any special skills beyond those routinely used by skilled artisans at the time of invention. In other words, the combination would have been no more than the use of a known technique (i.e., device configuration on an independent network) to improve similar devices (i.e., Cheshire's device/network) in the same way.

d. [1e.3]-[1e.5]

225. In my opinion, Cheshire discloses or renders obvious [1e.3]-[1e.5] for the same reasons discussed above in Ground 1. *See supra* Sections X.A.1.j-X.A.1.l.

2. Dependent Claims 2-10, and 12

a. Claims 2-3, 7, 8, 10, and 12

226. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 2, 3, 7, 8, 10, and 12 for the same reasons discussed above in Ground 1. *See supra* Section X.A.2.

- b. Claim 4: The playback device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: after receiving the second message, providing an indication that the playback device has successfully received the network configuration parameters for the secure WLAN.**

227. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 4 because Meenan describes an acknowledgement step that confirms that configuration information was both successfully received and implemented in a new device. Meenan (EX1006), 19:41-20:2.

228. Meenan specifically discloses a configuration method that contains the step in which “wireless device 710 sends to the home-networking gateway 715 an acknowledgment that the wireless configuration settings have been modified (step 770w) [and] [t]he home-networking gateway 615 receives the acknowledgment (step 770g).” Meenan (EX1006), 19:41-20:2.

229. A POSITA would have modified Cheshire’s configuration process to include Meenan’s acknowledgement step after new wireless device 104 received packet 200 (step 314) and before new wireless device 104 stopped advertising new wireless network 102 (step 316). In Cheshire’s Figure 3 below, I provide a visual

depiction of how Meenan's acknowledgement step would have been added to Cheshire's configuration process.

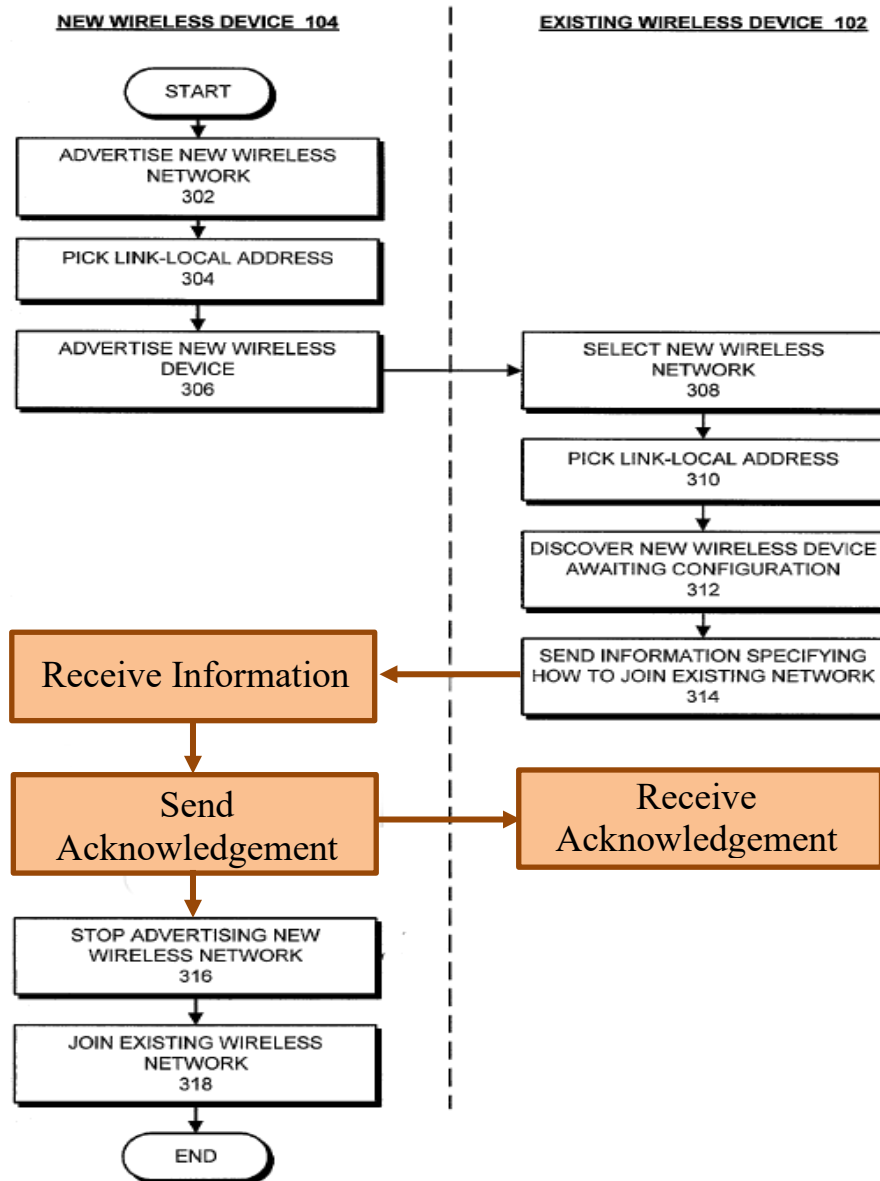


FIG. 3

Cheshire (EX1005), Fig. 3 (modified; annotated). A POSITA would have implemented the acknowledgement step before terminating the advertisement of new wireless network 106 because the devices still require network 106 to

communicate as new wireless device 104 has not yet joined existing wireless network 112. Other art, in addition to Meenan (EX1006), taught that providing an acknowledgement to existing wireless device over the initial communication path was a known step. *See* Ladas (EX1013), ¶44. Moreover, a POSITA would have sent the acknowledgement over new wireless network 106 because doing so would provide device 102 with an alert to switch back to existing wireless network 112 and to look for device 104 on network 112.

230. A POSITA would have interpreted Meenan's acknowledgement step as an *indication that the playback device has successfully received the network configuration parameters* because the purpose of the acknowledgment step is to alert gateway 715 "that the wireless configuration settings have been modified." Meenan (EX1006), 19:65-67. Meenan further instructs that if "gateway 715 does not receive an acknowledgment, the home-networking gateway 715 may take one of several actions, such as re-sending the wireless configuration information to the wireless device 710 or sending an electronic mail message to a user account to notify the user that an acknowledgment was not received." Meenan (EX1006), 20:2-7. Based on this disclosure, a POSITA would have understood that the acknowledgement step provides device 715 (i.e., Cheshire's existing wireless device 102) a signal that it does not need to continue to send the configuration information (i.e., Cheshire's packet 200).

i. Motivation to Combine with a Reasonable Expectation of Success

231. A POSITA would have been motivated to implement Meenan's acknowledgement step in Cheshire's configuration process because doing so would have provided existing wireless device 102 with confirmation that new wireless device 104 successfully received packet 200. Meenan (EX1006), 19:65-67; Ladas (EX1013), ¶44. As I noted above, a POSITA would have wanted to include such a signal because it would tell existing wireless device 102 that it does not need to continue sending or resend packet 200 and would also provide existing wireless device 102 with a signal to reconnect to existing wireless network 112. Meenan (EX1006), 20:2-7; Ladas (EX1013), ¶44. Further, the indication provides existing wireless device 102 with an opportunity to take additional action or re-send the packet if it was not successfully received as Meenan instructs. Meenan (EX1006), 20:2-7. In other words, in my opinion, a POSITA would have implemented the acknowledgement because doing so would have been practical, improving the performance of the configuration because it provides a safety net that ensures successful transmission. Furthermore, while it adds a step to the configuration, it prevents the devices from having to restart the process from the beginning if it is not successful.

232. A POSITA would have had a reasonable expectation of success in adding Meenan's acknowledgement step to Cheshire's configuration process. As I described above, Cheshire and Meenan both disclose similar wireless devices and provide methods of configuration that occur over a secure connection for a device to join a secure WLAN. *See* Sections X.B.1. The addition of the acknowledgement step to Cheshire results in the same outcome—e.g., new wireless device 104 joins existing wireless network 112—which makes the results predictable. Moreover, the use of an acknowledgement step was already known in the art, making the inclusion of the acknowledgement step merely the application of a known technique to a process that was ready for improvement. *See* Ladas (EX1013), ¶44. Indeed, the inclusion of an acknowledgement step in network communications generally was routine because it was seen as a helpful step that ensured successful transmission of messages. Meenan (EX1006), 20:2-7. Accordingly, a POSITA would have had a reasonable expectation of success in adding Meenan's acknowledgement step to Cheshire's configuration process.

- c. **Claim 5: The playback device of claim 4, wherein providing the indication comprises transmitting, to the computing device via the initial communication path, at least a third message indicating that the playback device has successfully received the network configuration parameters.**

233. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 5. Cheshire and Meenan renders obvious claim 5 for the same reasons described above in Ground 2, claim 4. *See supra* Section X.B.2.b. Claim 5 is closely related to claim 4 but specifies a “third message” as the indication.

234. It is further my opinion that a POSITA would have interpreted Meenan’s acknowledgement (step 770w) as a *third message*. For example, the acknowledgement would have been understood to be a message because it is a communication between the wireless devices. Moreover, a POSITA would have known or found it obvious that this is the *third message* because the acknowledgement would have come after the receipt of the second message containing the configuration parameters. Moreover, a POSITA would have known or found it obvious that this acknowledgement step, as implemented in Cheshire, would have occurred over new network 106 (i.e., the initial communication path) because it occurs **before** new device 104 stops advertising new network 102 (step 316)/joins existing network 112 (step 318) as I detailed with claim 4 above.

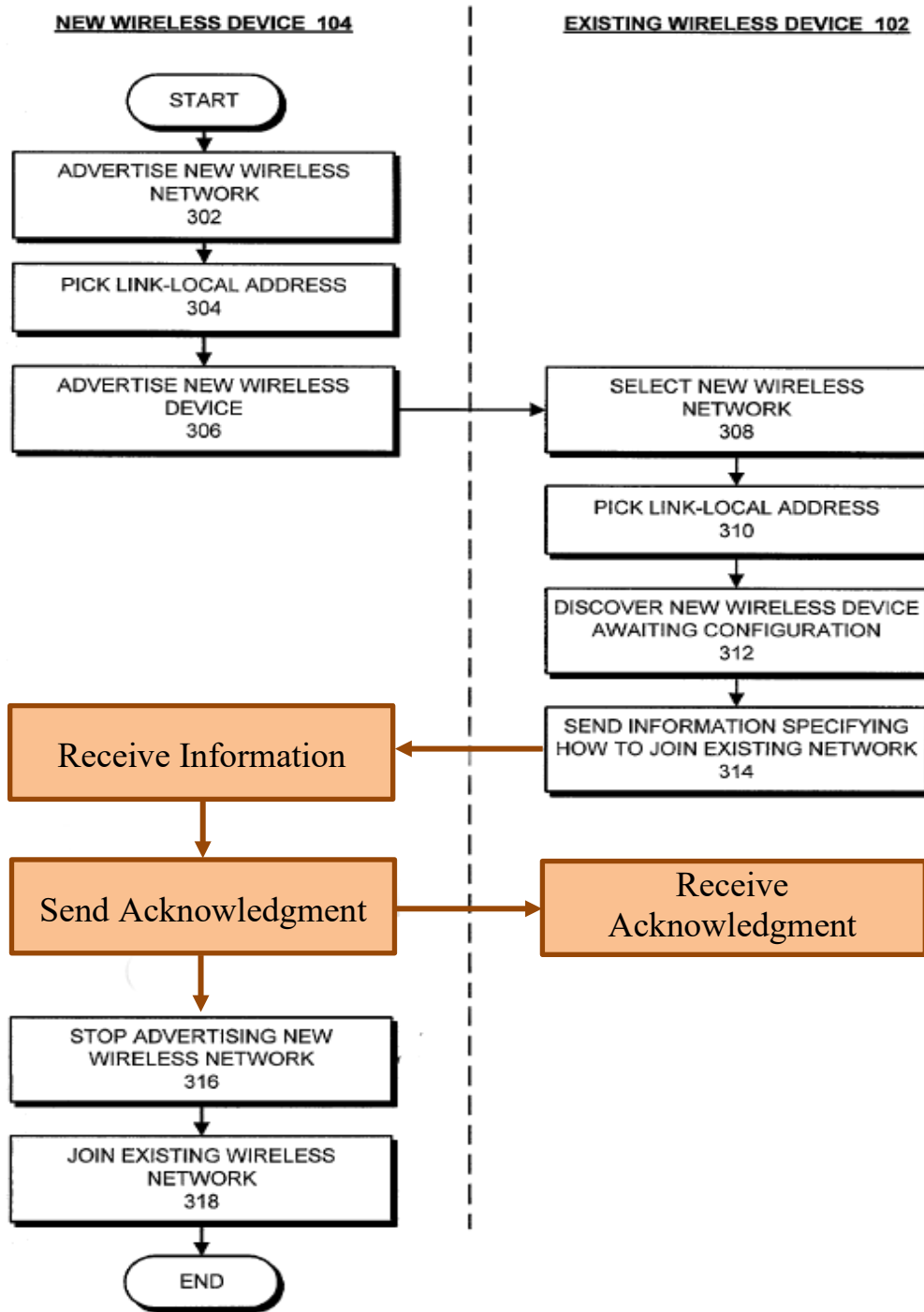


FIG. 3

Cheshire (EX1005), Fig. 3 (modified; annotated). Accordingly, Cheshire and Meenan renders obvious claim 5.

- d. Claim 6: The playback device of claim 4, wherein providing the indication comprises providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.**

235. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 6.

236. Cheshire and Meenan render obvious claim 6 for the same reasons described above in Ground 2, claim 4. *See* Section X.B.2.b. A POSITA further would have found it obvious to implement an acknowledgement step after device 104 joins existing wireless network 112 for the reasons detailed below.

237. Meenan describes that “wireless device 710 sends to the home-networking gateway 715 an acknowledgment that the wireless configuration settings *have been modified* (step 770w).” *See* Meenan (EX1006), 19:41-20:2 (emphasis added). Meenan details that the purpose of an acknowledgement step is to inform the home-networking gateway of successful receipt. For example, Meenan provides:

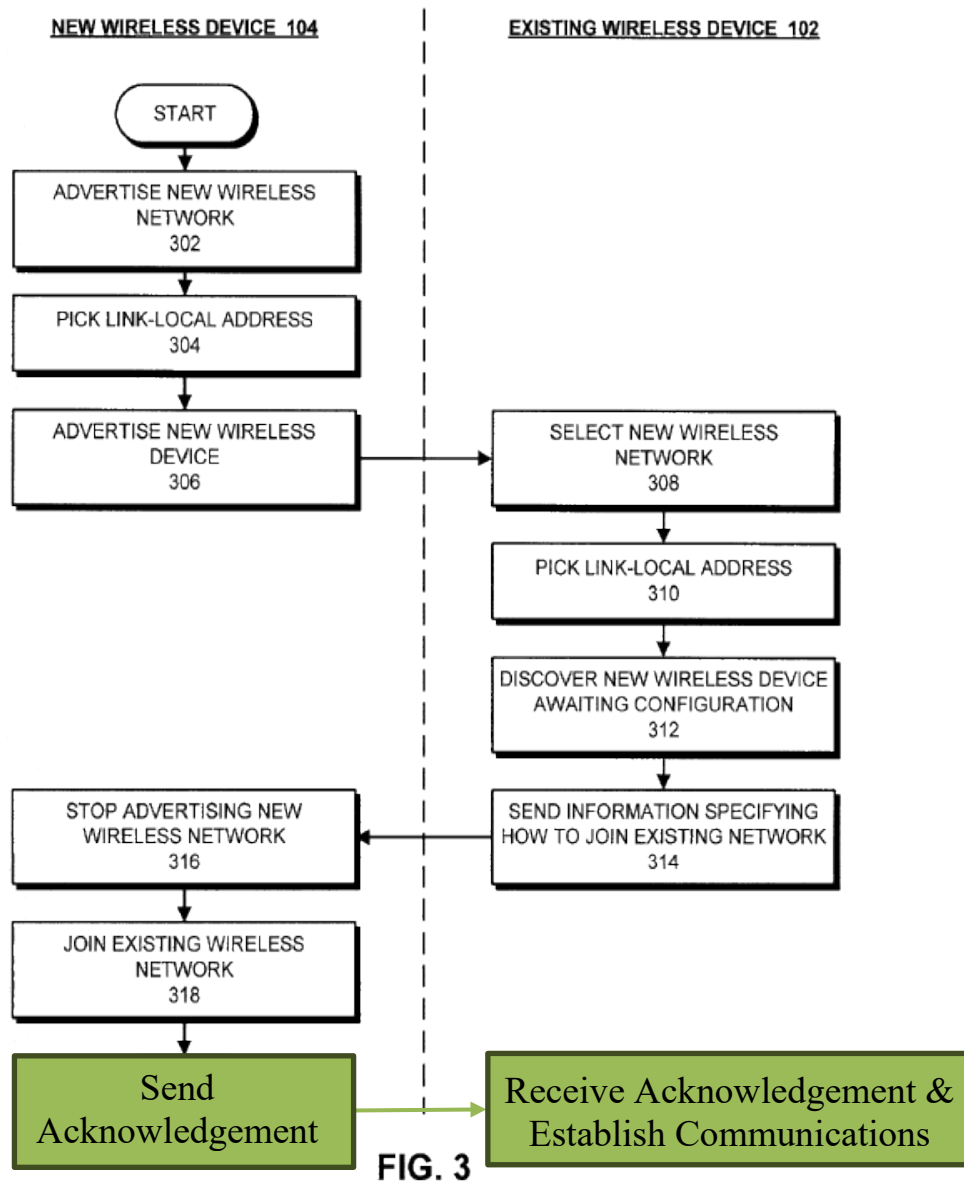
When the home-networking gateway 715 does not receive an acknowledgment, the home-networking gateway 715 may take one of several actions, such as re-sending the wireless configuration information to the wireless device 710 or sending an electronic mail

message to a user account to notify the user that an acknowledgment was not received.

Meenan (EX1006), 20:2-7. Based on these disclosures, a POSITA would have understood that acknowledgement steps are beneficial because they confirm that messages or steps have been successfully received and completed.

238. A POSITA would have found it obvious to implement another acknowledgement step after device 104 joins existing wireless network 112 because doing so would have been obvious to try and would have established a connection between device 104 and 102 on existing wireless network 112. For example, it would have been obvious to try because acknowledgement steps were known in the art and there are limited options to consider when deciding whether to include such a step. Indeed, a POSITA would have known that the options were to include an acknowledgement or not to include an acknowledgement of successful connection. It further would have been obvious to try because the modification does not explore new technology. Moreover, a POSITA would have been motivated to include an acknowledgement of a successful connection because doing so would establish communications between devices 104 and 102 on existing wireless network 112. Indeed, it would have at least been a suitable option to implement an acknowledgement step after device 104 joins existing wireless network 112 for the same reasons. In Cheshire's Figure 3 below, I provide a visual

depiction of how this acknowledgement step would have been incorporated into Cheshire's configuration process.



Cheshire (EX1005), Fig. 3 (modified; annotated).

239. A POSITA would have had a reasonable expectation of success in making this modification for the reasons described in Sections X.B.1.b-X.B.1.c.

Furthermore, this combination would have been reasonably successful because it does not change the underlying configuration of Cheshire's devices and would have been "the mere application of a known technique" (i.e., Meenan's acknowledgement step) "to a piece of prior art" (i.e., Cheshire's configuration process) "ready for the improvement."

240. A POSITA would have understood that this modification provides an indication that *the playback device has successfully connected to the secure WLAN using the network configuration parameters* because sending the acknowledgement over existing wireless network 112 would instruct existing wireless device 102 that new wireless device 104 was able to join existing wireless network 112.

- e. **Claim 9: The playback device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: receiving, from the computing device, a command to assign a name to the playback device.**

241. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 9.

242. Meenan describes that "home-networking gateway configuration information 115b also may include device information for devices 112 associated with the home-network 110." Meenan (EX1006), 5:35-37. "Device information may include a device identifier for a device, such as devices 112a-112h." Meenan

(EX1006), 5:37-39. Meenan instructs that the “device identifier may include ... a dynamic IP address. The dynamic IP address may be assigned by home-networking gateway 115, by some other network device” Meenan (EX1006), 5:39-47. Meenan provides that device information “may also include a user-assigned name. The user-assigned name may be referred to as a familiar name or a nickname.” Meenan (EX1006), 5:56-60.

243. Based on these disclosures, it is my opinion that a POSITA would have understood that Meenan suggests assigning names to wireless devices 112. Meenan (EX1006), 5:35-58. It is further my opinion that a POSITA further would have understood that Meenan suggests sending wireless devices 112 a command to adopt the user-assigned name because the information is sent as part of the configuration information. Meenan (EX1006), 5:20-60, 6:49-55, 19:30-40.

244. A POSITA would have been motivated with a reasonable expectation of success to implement Meenan’s user-assigned name teaching into Cheshire’s configuration process. For example, a POSITA would have been motivated to assign a name to new wireless device 104 because a name would have made it simpler to differentiate between and locate devices on the network. Meenan (EX1006), 5:56-60. A POSITA would have had a reasonable expectation of success in the combination because assigning names to devices was routine before the earliest effective filing date of the ’883 patent. Richenstein (EX1010),

¶169 (“headphones 8- and/or 980 may be provided with a means of individual identification ...”).

3. Claims 14 and 20

245. Although it is my opinion that Cheshire alone renders obvious claims 14 and 20 for the reasons I noted above, it is also my opinion that Cheshire and Meenan render obvious claims 14 and 20 for the same reasons discussed above with claim 1 because of the overlap between the claims. *See supra* Section X.B.1.

4. Dependent Claims 15-18

- a. Claim 15: The non-transitory, computer-readable storage medium of claim 14, wherein the triggering event comprises one of (a) powering on the playback device or (b) receiving user input via a physical interface of the playback device.**

246. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 15 for the same reason discussed above with claim 2. *See supra* Section X.B.2.a.

- b. Claim 16: The non-transitory, computer-readable storage medium of claim 14, wherein the non-transitory computer-readable medium is also provisioned with program instructions that are executable to cause the playback device to perform functions comprising: after receiving the second message, providing an indication that the playback device has successfully received the network configuration parameters for the secure WLAN.**

247. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 16. The limitations in claim 16 are nearly identical to those found in claim 4, as I demonstrate in the chart below.

Claim 4	Claim 16
4. The playback device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: <u>after receiving the second message, providing an indication that the playback device has successfully</u>	16. The non-transitory, computer-readable storage medium of claim 14, wherein the non-transitory computer-readable medium is also provisioned with program instructions that are executable to cause the playback device to perform functions comprising: <u>after receiving the second message, providing an indication that the playback device</u>

Claim 4	Claim 16
<u>received the network configuration parameters for the secure WLAN.</u>	<u>has successfully received the network configuration parameters for the secure WLAN.</u>

248. As discussed with claim 4 above, Cheshire and Meenan disclose or render obvious claim 16 because Meenan teaches an acknowledgement step that confirms that configuration information was not only successfully received but implemented in a new device. Meenan (EX1006), 19:41-20:2; *see supra* Section X.B.2.b.

249. Therefore, Cheshire and Meenan render obvious claim 16 for the same reason discussed above with claim 4. *See supra* Section X.B.2.b.

- c. **Claim 17: The non-transitory, computer-readable storage medium of claim 16, wherein providing the indication comprises transmitting, to the computing device via the initial communication path, at least a third message indicating that the playback device has successfully received the network configuration parameters.**

250. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 17. The limitations in claim 17 are nearly identical to those found in claim 5, as I demonstrate in the chart below.

Claim 5	Claim 17
5. The playback device of claim 4, wherein providing the indication comprises <u>transmitting, to the computing device via the initial communication path, at least a third message indicating that the playback device has successfully received the network configuration parameters.</u>	17. The non-transitory, computer-readable storage medium of claim 16, wherein providing the indication comprises <u>transmitting, to the computing device via the initial communication path, at least a third message indicating that the playback device has successfully received the network configuration parameters.</u>

251. As discussed with claims 4 and 5 above, Cheshire and Meenan disclose or render obvious claim 17 because Meenan describes an acknowledgement step, which a POSITA would have understood as a *third message*, that confirms that configuration information was not only successfully received but implemented in a new device. Meenan (EX1006), 19:41-20:2; *see supra* Sections X.B.2.b-X.B.2.c.

252. Therefore, Cheshire and Meenan render obvious claim 17 for the same reason discussed above with claim 5. *See supra* Section X.B.2.c.

- d. **Claim 18: The non-transitory, computer-readable storage medium of claim 16, wherein providing the indication comprises providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.**

253. In my opinion, Cheshire and Meenan disclose or render obvious the additional limitations of claim 18. The limitations in claim 18 are nearly identical to those found in claim 6, as I demonstrate in the chart below.

Claim 6	Claim 18
6. The playback device of claim 4, wherein providing the indication comprises <u>providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.</u>	18. The non-transitory, computer-readable storage medium of claim 16, wherein providing the indication comprises <u>providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.</u>

254. Cheshire and Meenan render obvious claim 18 for the same reason discussed above with claim 6. *See supra* Section X.B.2.d.

C. Grounds 3A and 3B: Cheshire and Spurgat [Ground 3A] or Cheshire, Meenan, and Spurgat [Ground 3B] Render Obvious Claims 1-19

255. Although I believe that Cheshire alone (Ground 1) or Cheshire and Meenan (Ground 2) render obvious claims 1-10, 12, and 14-18 of the '883 patent, it is also my opinion the claims are further obvious over Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B). *See* Sections X.A. and X.B. It is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claims 7-8, 10-11, 13-14, and 19.

1. Motivation to Combine Spurgat with Cheshire Alone or Cheshire and Meenan

256. A POSITA would have found Cheshire, Meenan, and Spurgat to be compatible references. For example, Cheshire, Meenan, and Spurgat describes wireless audio devices with similar functions and uses as the '883 patent. For example, Spurgat describes wireless audio playback devices, Cheshire teaches wireless “audio output devices,” and Meenan discloses “stereo systems.” Spurgat (EX1007), ¶7; Cheshire (EX1005), 3:6-14; Meenan (EX1006), 3:28-42. Spurgat further details that these devices are controlled by a computer (e.g., an audio gateway) that exchanges a series of messages with the audio device in a discovery process, and Cheshire outlines a method of configuring wireless devices that

includes device discovery. Spurgat (EX1007), ¶93; Cheshire (EX1005), 4:6-5:2.

Moreover, Spurgat highlights that “[d]iscovery of mobile digital audio players 115 and fixed digital audio players 116 within range of the audio gateway, on the wireless network or wireless communication platform 104, is an important capability with respect to this invention.” Spurgat (EX1007), ¶93. All three references describe a computing device that is configured to exchange messages with a type of audio device, and all three contemplate the use of IEEE 802.11 or wireless local area networks. Spurgat (EX1007), ¶¶55, 93; Cheshire (EX1005), 3:23-26, 4:6-5:2; Meenan (EX1006), 4:9-20, 17:62-20:51.

257. In my opinion, these similarities would have motivated a POSITA with a reasonable expectation of success to combine Cheshire and Spurgat or Cheshire, Meenan, and Spurgat. As I detail in depth below, a POSITA would have been motivated to implement Cheshire’s new wireless device 104 as described in Spurgat because Cheshire explicitly contemplates that its configuration process is applicable to audio output devices. Cheshire (EX1005), 3:3-14. Indeed, combining the references would have been no more than a simple implementation of known elements—i.e., Spurgat’s specific device components—within a known device that has an identical purpose—i.e., Cheshire’s audio output device. Because Meenan is not used to supplement or modify Cheshire’s audio output device, the addition of Meenan would not impact the Cheshire-Spurgat combination. Indeed, because the

combinations are merely a simple implementation of known elements, a POSITA would have expected that the combination to yield predictable results because the purpose and functionality of Cheshire would not change.

2. Claim 1

a. [1Pre]: A playback device comprising

258. Although I believe that Cheshire discloses or renders obvious *a playback device*, as described above in Grounds 1 and 2 (*see* Sections X.A.1.a, X.B.1.a), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious [1Pre] because Spurgat teaches “a digital audio playback device that uses wireless communication to interact and synchronize with a computing platform” Spurgat (EX1007), ¶3.

b. [1a]: a network interface that is configured to provide an interconnection with at least one data network

259. Although I believe that Cheshire discloses or renders obvious *a network interface that is configured to provide an interconnection with at least one data network*, as described above in Grounds 1 and 2 (Sections X.A.1.b and X.B.1.a), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious [1a] because Spurgat teaches “various digital audio players” that contain a “wireless network interface or wireless communication interface 141,” (*i.e.*, *a network interface ...*). Spurgat (EX1007), ¶72; *see also* Spurgat (EX1007), ¶¶55, 57, 69-86. Spurgat’s

wireless network interface 141 *configured to provide an interconnection with at least one data network* because it enables “[w]ireless communications” between devices on the network and a connection to the Internet. Spurgat (EX1007), ¶72; *see also* Spurgat (EX1007), ¶¶34, 55, 57, 69-86. A POSITA would have found it obvious to implement Cheshire’s audio output device (i.e., new wireless device 104) as the playback device described in Spurgat having a “wireless network interface or wireless communication interface 141.”

260. Further to my discussion above, a POSITA would have been motivated to implement Cheshire’s new wireless device 104 as described in Spurgat because Cheshire explicitly contemplates that its configuration process is applicable to audio output devices. Cheshire (EX1005), 3:3-14. A POSITA would have been specifically motivated to use Spurgat’s network interface 141 in Cheshire’s new wireless device 104 because it enables the device to connect to new wireless network 106 and existing wireless network 112. Spurgat (EX1007), ¶72; Cheshire (EX1005), 1:16-19, 1:28-36, 2:67-3:14, 3:30-35. As I described above in Ground 1, Cheshire describes that new wireless network device 104 is configured to communicate over a network. *See* Section X.A.1.b. A POSITA would have been motivated to use Spurgat’s “wireless network interface or wireless communication interface 141” because Spurgat discloses that this component is designed to facilitate “communication using a wireless network or

wireless communication platform 104 by the mobile digital audio player 115 with a computer platform 103, other mobile digital audio players 115, and fixed digital audio players 116.” Spurgat (EX1007), ¶72.

261. A POSITA would have had a reasonable expectation of success in the implementation because Cheshire teaches that new wireless device 104 is already configured to connect to networks, and thus, the implementation would not impact Cheshire’s device functionality while also still achieving its original purpose. For example, Cheshire’s configuration method remains unchanged, and new wireless device 104 would still be able to communicate over networks. Moreover, a POSITA would have found Cheshire and Spurgat compatible because they both describe wireless audio devices. In other words, the combination is nothing more than an implementation of known prior art elements according to known methods to yield predictable results.

c. [1b]: at least one processor;

262. Although I believe that Cheshire discloses or renders obvious *a playback device*, as described above in Grounds 1 and 2 (Sections X.A.1.c and X.B.1.a), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious [1b] because Spurgat teaches “a processor 155 that is responsible for executing various software and firmware components” (i.e., *a processor*). Spurgat (EX1007), ¶72; *see also*

Spurgat (EX1007), ¶¶57, 69-85. A POSITA would have found it obvious to implement Cheshire's audio output device (i.e., new wireless device 104) as the playback device described in Spurgat having a "a processor 155."

263. Further to my discussion above, a POSITA would have been motivated to implement Cheshire's new wireless device 104 as described in Spurgat because Cheshire explicitly contemplates that its configuration process is applicable to audio output devices. Cheshire (EX1005), 3:3-14. A POSITA would have been specifically motivated to use Spurgat's processor 155 in Cheshire's new wireless device 104 because it enables the device to execute the steps of Cheshire's configuration process. Spurgat (EX1007), ¶72; Cheshire (EX1005), 1:16-19, 1:28-36, 3:3-10, 3:30-35, 4:11-25. As I described above in Ground 1, Cheshire describes that new wireless network device is configured to execute a configuration process. Section X.A.1.c. A POSITA would have been motivated to use Spurgat's "processor 155" because Spurgat instructs "is responsible for executing various software and firmware components." Spurgat (EX1007), ¶72.

264. A POSITA would have had a reasonable expectation of success in the implementation because Cheshire teaches that new wireless device 104 is already configured to connect to networks, and thus, the implementation would not impact Cheshire's device functionality while also still achieving its original purpose. For example, Cheshire's configuration method remains unchanged and new wireless

device 104 would still be able to communicate over networks. Indeed, the inclusion of Spurgat's processor would explain how Cheshire's device executes its configuration method. Moreover, a POSITA would have found Cheshire and Spurgat compatible because they both describe wireless audio devices. In other words, the combination is nothing more than an implementation of known prior art elements according to known methods to yield predictable results.

**d. [1c]: a non-transitory computer-readable medium;
and**

265. Although I believe that Cheshire discloses or renders obvious *a non-transitory computer-readable medium*, as described above in Grounds 1 and 2 (*see supra* Section X.A.1.d), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious [1c] because Spurgat teaches a "player storage 156, such as a hard drive ..." (i.e., *a non-transitory computer readable medium*). Spurgat (EX1007), ¶72; *see also* Spurgat (EX1007), ¶¶57, 69-85. A POSITA would have found it obvious to implement Cheshire's audio output device (i.e., new wireless device 104) as the playback device described in Spurgat having a "player storage 156."

266. Further to my discussion above, a POSITA would have been motivated to implement Cheshire's new wireless device 104 as described in Spurgat because Cheshire explicitly contemplates that its configuration process is

applicable to audio output devices. Cheshire (EX1005), 3:3-14. A POSITA would have been specifically motivated to use Spurgat's player storage 156 in Cheshire's new wireless device 104 because it enables the device to complete the same function as Cheshire's "computer-readable storage medium" that stores "instructions that when executed by a computer cause the computer to perform a method." Spurgat (EX1007), ¶72; Cheshire (EX1005), 2:48-59, 6:62-7:29. As I described above in Ground 1, Cheshire describes that new wireless network device is configured to execute a configuration process that are saved on a "computer-readable storage medium." *See* Section X.A.1.d. A POSITA would have been motivated to use Spurgat's player storage 156 because Spurgat instructs the "software and firmware components are executed by the processor 155 directly from their storage location" Spurgat (EX1007), ¶72.

267. A POSITA would have had a reasonable expectation of success in the implementation because Cheshire teaches that new wireless device 104 is already configured to connect to networks, and thus, the implementation would not impact Cheshire's device functionality while also still achieving its original purpose. For example, Cheshire's configuration method remains unchanged and new wireless device 104 would still be able to communicate over networks. Indeed, the inclusion of Spurgat's player storage 156, while effectively the same component as Cheshire's storage medium, would ensure compatibility with the other components

described above. Moreover, a POSITA would have found Cheshire and Spurgat compatible because they both describe wireless audio devices. In other words, the combination is nothing more than an implementation of known prior art elements according to known methods to yield predictable results.

e. [1d]: program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:

268. Although I believe that Cheshire discloses or renders obvious “*program instructions* ... [that] cause the playback device to perform functions,” as described above in Grounds 1 and 2 (*see supra* Section X.A.1.e), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious [1d] because Spurgat teaches “[t]he software and firmware components are executed by the processor 155 directly from their storage location ...” and that “processor 155 ... is responsible for executing various software and firmware components.” Spurgat (EX1007), ¶¶72; *see also* Spurgat, ¶¶57, 69-86. A POSITA would have found [1d] obvious because Cheshire teaches a similar function of its own storage medium, namely, “storing instructions that when executed by a computer cause the computer to perform a method” Cheshire (EX1005), 6:62-7:29, 2:48-51.

269. A POSITA would have known Cheshire's program instructions (e.g., its process steps) to be storable on Spurgat's player storage because both references describe memory similarly. For example, both Cheshire and Spurgat disclose the use of non-transitory memory such as disk drives (Cheshire (EX1005), 2:48-59) and hard drives (Spurgat (EX1007), ¶¶72). As I describe in Section X.A, a POSITA would have recognized these as forms of non-transitory memory. A POSITA further would have found Cheshire's program instructions to be storable on Spurgat's similar memory because Spurgat describes that its "flow diagrams represent only one of many different ways to implement the key software functionality for the player." Spurgat (EX1007), ¶102. In other words, Spurgat provides a motivation to store other types of software on its memory, such as data for device configuration. Moreover, a POSITA would have known Cheshire's program instructions to be executable with Spurgat's processor because both references describe that their devices execute discovery steps. Spurgat (EX1007), ¶93; Cheshire (EX1005), 4:6-5:2.

f. [1e.1]-[1e.5]

270. Cheshire alone or Cheshire and Meenan disclose or render obvious [1e.1]-[1e.5] for the same reasons discussed above in Grounds 1 and 2. *See supra* Sections X.A.1.f-X.A.1.l, X.B.1.aX.-B.1.d. Moreover, a POSITA would have found Cheshire's configuration process to be compatible with Spurgat's device

components because Spurgat merely provides components that a skilled artisan would have known to be needed to execute Cheshire's configuration process. Rector (EX1021), ¶¶21, 26; Ladas (EX1013), ¶11. And the combination does nothing to change Cheshire's configuration process.

271. Although I believe that Cheshire discloses *a computing device installed with an application for controlling a playback device*, Spurgat additionally discloses or renders obvious this limitation because it teaches a computer “used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content.” EX1007, ¶¶34-36. A POSITA would have understood that Spurgat's computer is *installed with an application for controlling a playback device* because Spurgat instructs that the computer contains, among other features, “software components”—*i.e.*, an application—and “wireless network interface” for wireless communication with the various audio players. EX1007, ¶¶60-65. As I described above in Section X.A.1.g, an application is a type of programming or software. The wireless interface is how the computer communicates the “control” instructions of changing the playlist or audio content to the audio players. EX1007, ¶¶36, 60-65, 93.

272. A POSITA would have found it obvious to implement Spurgat's computer features in Cheshire's existing device 102 (device controller) for the

same reasons discussed above in Sections X.C.1-X.C.2.a-e. A POSITA would have been further motivated to include Spurgat's application in Cheshire's existing device 102 (device controller) because it would have provided the device controller with the means to control the audio output device (new device 104). A POSITA would have had a reasonable expectation of success in this implementation because both references describe how computing devices communicate with audio devices over a network.

3. Dependent Claims

a. Claims 2-10, 12, and 14-18

273. In my opinion, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) disclose or render obvious the additional limitations of claims 1-10, 12, and 14-18. Cheshire and Spurgat render obvious claims 1-10, 12, and 14-18 for the same reasons discussed in Grounds 1 and 2. *See supra* Sections X.A.1-X.A.2.d, X.A.3-X.A.4, X.B.1-X.B.4.

b. Claim 3

274. Although it is my opinion that Cheshire alone or Cheshire and Meenan disclose or render obvious claim 3 in Grounds 1 and 2, it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious claim 3 because Spurgat teaches a computer "used to control mobile digital audio players 115 and fixed digital audio

players 116” EX1007, ¶¶34-36; Sections X.A.2.b. A POSITA would have understood that Spurgat describes a networked audio system because “a communication system between a number of digital audio players” and the computer (i.e., controller device of a networked audio system). EX1007, ¶¶11, 14.

275. A POSITA would have been motivated with a reasonable expectation of success to implement Spurgat’s computer features in Cheshire’s existing device 102 (controller device) for the same reasons discussed above in Section X.C.2. For example, a POSITA would have found it obvious to use Cheshire’s supplemented existing device 102 (controller device) to control a networked audio system comprising at least Cheshire’s supplemented new device 104 because doing so would have made controlling the audio device simpler and improved the user experience because a user could control the audio device from a distance.

- c. **Claim 6: The playback device of claim 4, wherein providing the indication comprises providing an indication that the playback device has successfully connected to the secure WLAN using the network configuration parameters.**

276. In my opinion, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 6 because Spurgat teaches that “[d]iscovery of mobile digital audio players 115 and fixed digital audio players 116 within range of the audio gateway, on the wireless network or wireless

communication platform 104, is an important capability with respect to this invention.” Spurgat (EX1007), ¶¶93, 107. A POSITA would have understood that Spurgat’s discovery is an *indication* that the audio player *has successfully connected to the secure WLAN using the network configuration parameters* as the audio player could not be discovered on a network if it were not connected to it. A POSITA would have found it obvious to implement Spurgat’s discovery steps in Cheshire’s configuration process after new wireless device 102 is configured and on existing wireless network 112 because doing so would enable communications between new wireless device 102 and the other devices on the network.

277. Spurgat describes that after audio players are connected to a network, the audio gate and the audio players engage in a discovery process. Spurgat (EX1007), ¶¶93, 107. The discovery process is depicted in Figure 17, reproduced below.

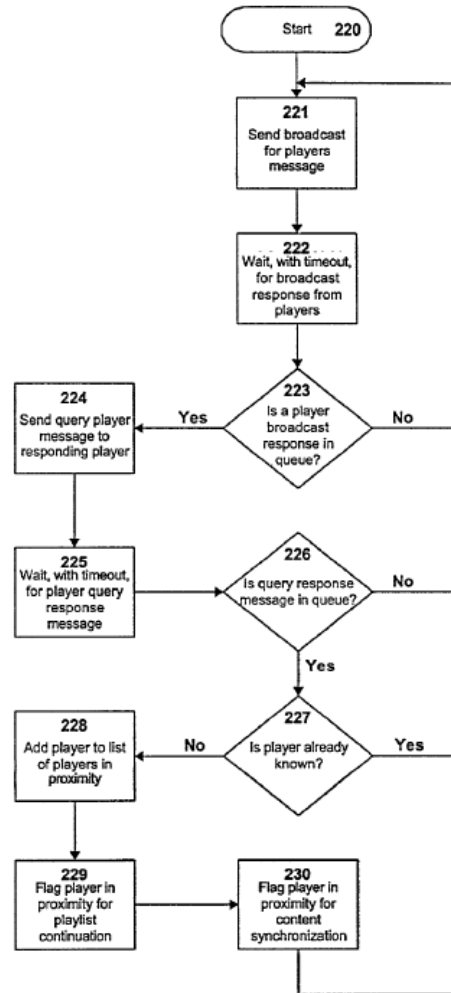


Figure 17

Spurgat, Fig. 17. Figure 17 represents the discovery process from the perspective of the audio gateway device, whereas Figures 22 and 23, not reproduced here, describe the process from the perspective of the audio players. Spurgat (EX1007),

¶¶93, 107-108. This process involves the exchange of messages that result in a connection between the audio gate and the various audio players. Spurgat (EX1007), ¶¶93, 107-108.

278. A POSITA would have understood that Spurgat's discovery is an *indication* that the audio player *has successfully connected to the secure WLAN using the network configuration parameters*. A POSITA would have interpreted a discovery process as a successful connection because the audio player could not be discovered on a network if it were not connected to it. Spurgat (EX1007), ¶¶93, 107-108. Indeed, Cheshire describes a similar sentiment as discovery on new wireless network 106 occurs after new wireless device 102 and existing wireless device 104 are on new wireless network 106. Cheshire (EX1005), 4:20-30, 4:44-46.

279. A POSITA would have found it obvious to implement Spurgat's discovery steps in Cheshire's configuration process after new wireless device 102 is configured and on existing wireless network 112. A POSITA would have been motivated to add this post-configuration step into Cheshire, because doing so would enable communications between new wireless device 102 and the other devices on the network. Moreover, a POSITA would have implemented this post-configuration step in Cheshire, because Spurgat instructs that device discovery is "important" and allows for the synchronization of devices on the network. A

POSITA would have had a reasonable expectation of success in the implementation of the post-configuration discovery at least because device discovery was known and routine in the art. Further, a POSITA would have expected a successful combination because Cheshire discloses that its devices are configured to conduct discovery, indicating that the additional step would not require any significant changes to Cheshire's new wireless device 104.

280. Therefore, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 6.

d. Claims 7-8

281. Although I believe that Cheshire alone or Cheshire and Meenan disclose or render obvious claims 7 and 8, as described above in Grounds 1 and 2 (*see supra* Sections X.A.2.c, X.B.2.a), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious claims 7 and 8 because Spurgat teaches “a communication system between a number of digital audio players and stand-alone audio gateway.” Spurgat (EX1007), ¶¶11, 14.

282. As I discussed in Ground 1, claims 7 and 8 recite well-known alternatives when adding new audio devices to a networked audio system. *See* Section X.A.2.c. Namely, claim 7 recites *establishing a new networked audio system* and claim 8 recites *joining an existing networked audio system*. These

claims collectively recite the two alternatives for audio systems—new or existing—and therefore would have been obvious.

283. First, Spurgat discloses *establishing a new networked audio system* (claim 7). Spurgat describes “a digital audio playback device that uses wireless communication to interact and synchronize with a computing platform as well as other mobile digital audio players and fixed digital audio players.” Spurgat (EX1007), ¶3. For example, Spurgat describes that “a local wireless network is formed[,] which enables wireless communication between a host, such as a personal computer 105 ... and various digital audio players” Spurgat (EX1007), ¶¶54, 55. Spurgat instructs that “computing platform 103 may also be used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content, among other things, on [115 and 116].” Spurgat (EX1007), ¶¶34-36. When a first audio player is added to the network with at least one personal computer, a POSITA would have understood that this establishes *a new networked audio system* because the addition would have allowed the audio player to communicate with other devices on the network.

284. Second, Spurgat also discloses *joining an existing networked audio system* (claim 8). For example, Spurgat describes that, during device discovery, when the “player is not already known, then the discovery handler adds the player

to the list of players in proximity.” Spurgat (EX1007), ¶¶92-97. A POSITA would have understood that the addition to a list means that (1) there are already players on the network, and (2) the player is joining an existing networked audio system because it is not part of a group that already exists on the network.

285. A POSITA would have found it obvious to implement Spurgat’s teachings on Cheshire’s devices for the same reasons discussed above.

Sections X.C.1 and X.C.2 A POSITA would have been motivated to implement Cheshire’s new wireless device 104, with Spurgat’s components, on a *new* and an *existing networked audio system* based on Spurgat’s teachings. For example, Spurgat provides that connecting a device to a network allows for it to be wirelessly controlled. Spurgat (EX1007), ¶36. Moreover, having multiple devices on one network controlled by one controller allows for the same music to be played across the devices or to “continue the same music and playlist in a seamless manner” between the devices. Spurgat (EX1007), ¶¶36, 43. It further would have been obvious to try establishing a new networked audio system or joining a new audio networked audio system because there are limited options when adding a new device to a network and doing so would not explore new technology as audio systems already existed well before the invention of the ’883 patent. Spurgat (EX1007), ¶¶34-36, Richenstein (EX1010), ¶¶66, 144, 146, 162-166, 174-176; Shdema (EX1020), ¶¶2-10. A POSITA would have had a reasonable expectation of

success in implementing these audio systems because Spurgat is directed to such audio systems and establishing audio systems was known in the art. Sections X.C.1, X.C.2, IX.C; Shdema (EX1020), ¶2 (“Traditionally, the audio program system configures with multiple speakers cabled together.”), ¶10 (“The audio management system is connected to the speakers via a network”).

286. Therefore, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claims 7 and 8.

- e. **Claim 10: The playback device of claim 1, wherein communicating with the computing device via the secure WLAN comprises receiving a command related to playback of audio content.**

287. Although I believe that Cheshire alone or Cheshire and Meenan disclose or render obvious claim 10, as described above in Grounds 1 and 2 (*see supra* Sections X.A.2.d, X.B.2.a), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious claim 10 because Spurgat teaches “computing platform 103 may also be used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content, among other things, on [115 and 116].” Spurgat (EX1007), ¶¶34-36. A POSITA would have interpreted that, for example, “changing ... the currently playing digital audio content” amounts to changing a song. Spurgat (EX1007), ¶97 (“sends

the content data to the player”). A POSITA would have understood that changing a song in these disclosures involves a command because the controller instructs the audio content to be played.

288. A POSITA would have found it obvious to implement Spurgat’s teachings on Cheshire’s devices for the same reasons discussed above. Sections X.C.1, X.C.2, X.C.3.b, X.C.3.d.

289. Therefore, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 10.

- f. **Claim 11: The playback device of claim 10, wherein the command comprises a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN, and wherein the playback device further comprises program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: in response to receiving the command, retrieving the audio content from the audio source via the communication path that includes the secure WLAN.**

290. In my opinion, Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 11 because Spurgat’s audio player retrieves “audio content ... not contained on the player” when queried, i.e., commanded to synchronize its audio content with the audio files on a gateway or computer (source). EX1007, ¶97; *id.*, ¶¶112, 34, 41 (computer works as

an audio gateway), 36. Spurgat explains its synchronization process in Fig. 19. At step 263, the gateway “sends a query player for content message to the player.”

EX1007, ¶97. A POSITA would have understood this query to be the command required by claim 10 because it is a query commanding a responsive message of the audio content for playback on the device—i.e., it is for playback. Once the player receives the query (command), it sends a “player content response message” back to the gateway at steps 264-265. Spurgat’s “player content response message” causes the player to retrieve audio content from the source (digital content files on the gateway) because it informs the gateway of what audio content is synced to the player and allows the gateway to determine what additional audio content needs to be transmitted to the player to complete the content synchronization process.

EX1007, ¶97. Spurgat explains, the “player’s digital audio content information is contained in the content response message sent to the gateway by the player” and allows the gateway to “check if there is any content in the gateway that is not on the player” (steps 267-268). EX1007, ¶97. If the gateway determines the gateway contains content that has not been synchronized to the player, the gateway “sends the content data to the player in step 270” over the wireless network. EX1007, ¶97.

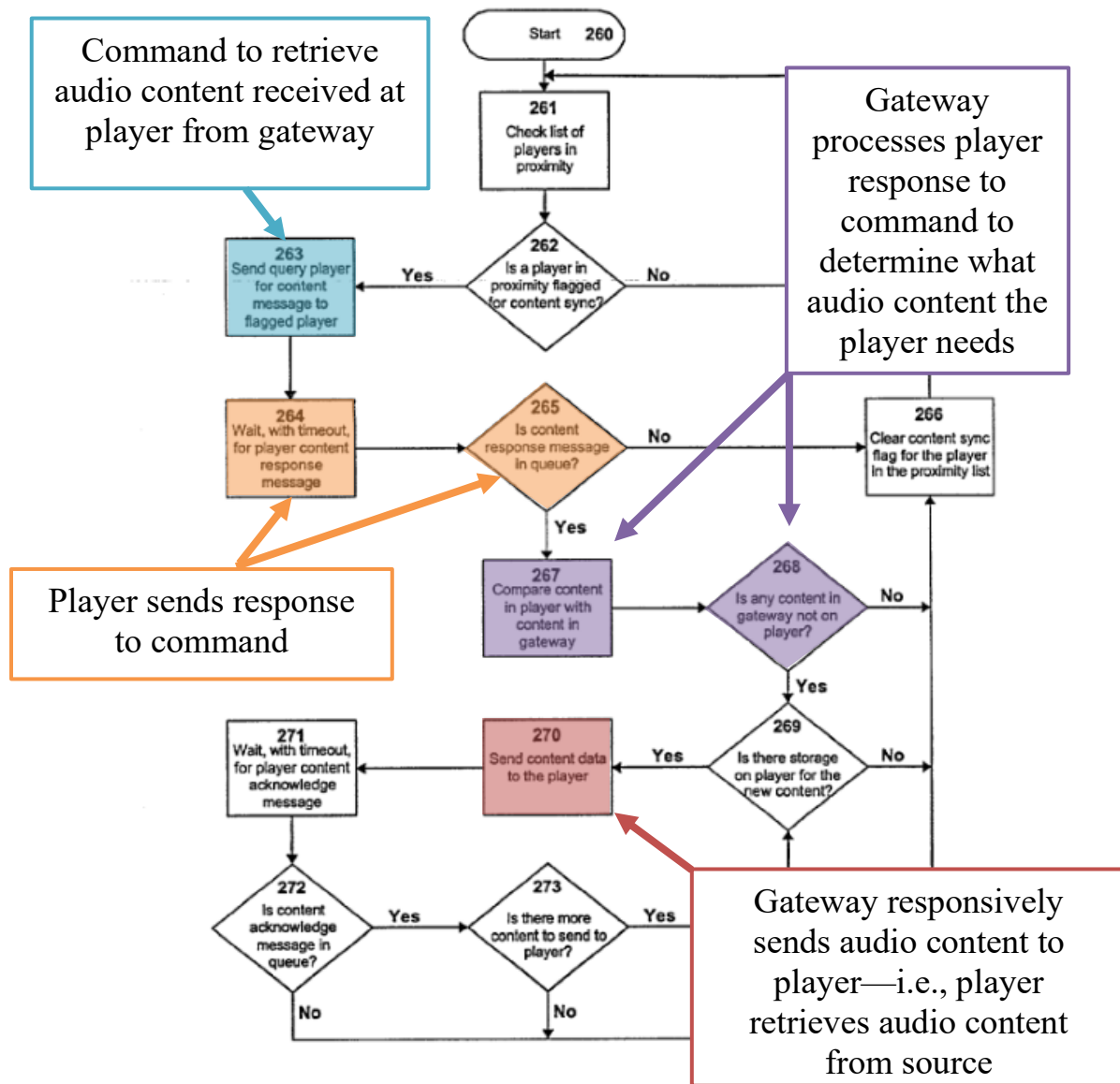


Figure 19

EX1007, FIG. 19 (annotated). A POSITA would have understood Spurgat’s player *retrieves audio content for playback from an audio source that is accessible via a communication path* because the player transmits its response to the gateway’s query to initiate transmission of audio content from the gateway over the network.

291. Spurgat teaches that “personal computer 105 is thus able to download digital audio content and other information 101 from the server 100 (FIG. 1) connected to the Internet or other computer network 102” and that the computer controls the audio players “by changing the current playlist or the currently play digital audio content.” Spurgat (EX1007), ¶¶34-46. Spurgat further instructs that its synchronization process involves a series of communications between the audio players and the computer, where the audio player messages the computer a list of the “digital audio content in the player”—equaling a request for content that it does not already have. Spurgat (EX1007), ¶¶97, 112. A POSITA would have understood this process amounts to a retrieval of audio content from an audio source because the digital audio content did not previously exist on the audio player and because it is transmitted over the network.

292. A POSITA would have found it obvious to implement Spurgat’s teachings on Cheshire’s devices for the same reasons discussed above, to retrieve audio content from an audio source accessible via the secure WLAN. Sections X.C.1, X.C.2, X.C.3.b-X.C.3.e. Additionally, a POSITA would have been motivated to implement Spurgat’s player content synchronization flow because doing so would allow for new wireless device 104 to obtain audio content for playback without the need for manual intervention. For example, it would not require a user to insert a CD into an audio device. In addition to the reasons

described above, a POSITA would have expected such a combination to be successful because limiting the manual input into its device is a common goal of both Cheshire (EX1005), Spurgat (EX1007), and Meenan (EX1006).

- g. Claim 13: The computing device of claim 1, further comprising program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the computing device to perform functions comprising: after transitioning to communicating with computing device via the secure WLAN, receiving, from the computing device, a command to form a group with at least a first playback device of a networked audio system such that the playback device is configured to play back audio content in synchrony with at least the first playback device.**

293. In my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 13 because Spurgat teaches that “the digital audio playback device is configured to enable wireless communication among other digital playback devices and/or a computing platform to allow synchronization and control.” Spurgat (EX1007), ¶7.

294. Spurgat instructs that “computing platform 103 may also be used to control mobile digital audio players 115 and fixed digital audio players 116 by changing the current playlist or the currently playing digital audio content, among other things, on [115 and 116].” Spurgat (EX1007), ¶¶34-36. Spurgat further

discloses that this synchronization allows for a user to continue listening to music “in a seamless manner.” Spurgat (EX1007), ¶43.

295. In my opinion, a POSITA would have established an audio system as discussed in Sections X.C.3.b, X.C.3.d above. A POSITA would have known or found it obvious that when Cheshire’s audio output device joins an existing networked audio system—in other words, when multiple audio output devices are on the same network—it forms a group because, as Spurgat instructs:

If the player is not already known, then the discovery handler adds the player *to the list of players in proximity* in step 228 of the audio gateway. *Finally, the discovery handler flags the new player in proximity for playlist continuation in step 229 and for content synchronization in step 230.* This allows the playlist continuation handler in the audio gateway to capture the current playlist and current selection from this new player for possible broadcast to other players. Also, this allows the content synchronization handler in the audio gateway to automatically download digital audio content and other information 101 cached on the audio gateway to the new player.

Spurgat (EX1007), ¶93 (emphases added). A POSITA would have understood that Spurgat discloses *receiving, from the computing device, a command to form a group*, because Spurgat’s audio gateway (i.e., a computing device) adds the new

player to “the list of players” (i.e., a group). A POSITA would have further interpreted the creation of this list as a *command* to form a group with other devices because Spurgat instructs that the new player is forced to share its status and begin communicating with the audio gateway and other plays to operate in sync. Spurgat (EX1007), ¶93; *see also* Spurgat (EX1007), ¶¶36, 43, 99.

296. A POSITA would have further been motivated to configure multiple audio output devices to play in sync based on Spurgat’s teachings. Spurgat (EX1007), ¶¶36, 43, 99. Moreover, a POSITA would have been motivated to operate the audio output devices in sync because doing so would improve the user’s experience as the user could listen to “the same music and playlist in a seamless manner.” Spurgat (EX1007), ¶¶36, 43, 99. Moreover, a POSITA would have been motivated to operate the devices in sync because it would prevent degraded audio quality. Richenstein (EX1010), ¶¶53-61, 68. A POSITA would have had a reasonable expectation of success in applying Spurgat’s instructions to Cheshire’s devices because doing so would have been straightforward and routine as grouping devices and playing audio content on multiple devices in sync was already well-known in the art. Richenstein (EX1010), ¶¶53-61, 68; Shdema (EX1020), ¶28 (describing “isochronous communication”).

4. Claims 14 and 19

297. Although I believe that Cheshire discloses or renders obvious *a non-transitory computer-readable medium*, as described above in Grounds 1 and 2 (*see supra* Sections X.A.1.d and X.B.3), it is also my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) alternatively render obvious claim 14 because Spurgat teaches a “player storage 156, such as a hard drive ...” (i.e., *a non-transitory computer readable medium*). Spurgat (EX1007), ¶72; *see also* Spurgat (EX1007), ¶¶57, 69-85. Because of the overlap in claim language between claim 1 and claim 14, in my opinion, Cheshire and Spurgat or Cheshire, Meenan, and Spurgat disclose or render obvious for the same reasons discussed in Sections X.A.1, X.A.3, X.B.1, X.B.3.

298. It is further my opinion that Cheshire and Spurgat (Ground 3A) or Cheshire, Meenan, and Spurgat (Ground 3B) render obvious claim 19. The limitations in claim 19 are nearly identical to those found in claim 11, as I demonstrate in the chart below.

Claim 11	Claim 19
11. The playback device of claim 10, wherein the command comprises a command to <u>retrieve audio content for</u>	19. The non-transitory, computer-readable storage medium of claim 14, wherein communicating with the

Claim 11	Claim 19
<p><u>playback from an audio source that is accessible via a communication path that includes the secure WLAN, and wherein the playback device further comprises program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising: in response to receiving the command, retrieving the audio content from the audio source via the communication path that includes the secure WLAN.</u></p>	<p>computing device via the secure WLAN comprises <u>receiving a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN, and wherein the non-transitory computer-readable medium is also provisioned with program instructions that are executable to cause the playback device to perform functions comprising: in response to receiving the command, retrieving the audio content from the audio source via the communication path that includes the secure WLAN.</u></p>

299. As discussed with claim 11 above, Cheshire and Spurgat or Cheshire, Meenan, and Spurgat disclose or render obvious claim 19 because Spurgat teaches that “personal computer 105 is thus able to download digital audio content and other information 101 from the server 100 (FIG. 1) connected to the Internet or other computer network 102” and that the computer controls the audio players “by changing the current playlist or the currently play digital audio content.” Spurgat (EX1007), ¶¶34-46; Section X.C.3.f.

XI. CONCLUSION

300. For the reasons set forth above, it is my opinion that one skilled in the art would have found claims 1-20 of the '883 patent obvious.

301. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

302. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: July 8, 2025

Respectfully submitted,


Stuart J. Lipoff