

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,
AT&T MOBILITY LLC,
Petitioners,

v.

SOLOCRON MEDIA, LLC,
Patent Owner

Patent No. 7,257,395

Issued: August 14, 2007

Filed: August 16, 2002

Inventor: Michael E. Shanahan

Title: METHODS AND APPARATUSES FOR PROGRAMMING USER-
DEFINED INFORMATION INTO ELECTRONIC DEVICES

Inter Partes Review No. 2015-_____

Declaration of Henry Houh Regarding

U.S. Patent No. 7,257,395

I, Henry Houh, do hereby declare and state, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further 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.

Dated: December 8, 2014

Henry Houh

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I. INTRODUCTION

A. Engagement

1. I have been retained by counsel for Cellco Partnership d/b/a Verizon Wireless (“Verizon Wireless”) as an expert witness in the above-captioned proceeding. I have been asked to provide my opinion about the state of the art of the technology described in U.S. Patent No. U.S. Patent No. 7,257,395 (“the ‘395 patent”) (Exhibit 1001) and on the patentability of claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 of the ‘395 patent. The following is my written report on these topics.

B. Background and Qualifications

2. My Curriculum Vitae is submitted herewith as Exhibit A hereto.
3. I received a Ph.D. in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1998. I also received a Master of Science degree in Electrical Engineering and Computer Science in 1991, a Bachelor of Science Degree in Electrical Engineering and Computer Science in 1990, and a Bachelor of Science Degree in Physics in 1989.
4. As further indicated in my C.V., I have worked in the electrical engineering and computer science fields, including web site and web server development, on several occasions. As part of my doctoral research at MIT from 1991-1998, I worked as a research assistant in the Telemedia Network Systems (TNS) group at the Laboratory for Computer Science. The TNS group built a high

speed gigabit network and applications which ran over the network, such as remote video capture, processing and display on computer terminals. In addition to helping design the core network components, designing and building the high speed links, and designing and writing the device drivers for the interface cards, I also set up the group's web server, which at the time was one of the first several hundred web servers in existence.

5. I authored or co-authored twelve papers and conference presentations on our group's research. I also co-edited the final report of the gigabit networking research effort with the Professor (David Tennenhouse) and Senior Research Scientist of the group (David Clark), who is generally considered to be one of the fathers of the Internet Protocol.

6. I started building web servers in 1993, having set up the web server for the research group, to which I belonged. Our group's web server went on to provide what was one of the first live Internet video initiated from a web site. Our web server also archived a number of recorded video clips (including audio) which could be browsed, and updated the library of video/audio clips on an ongoing basis.

7. In 1994, I founded a company called Agora Technology Group which set up advertising-supported web sites service for college recruiting called HIRES (Hypermedia Internet Recruitment and Employment Services). Agora also

provided web consulting services to companies; Agora set up web sites for Bay Networks (later purchased by Nortel) and Data Communications Magazine, among others.

8. While at MIT, I also studied communications, wireless networking, video and audio encoding, and streaming media. As part of my expert witness work, I have also studied cell phone applications, including phone applications and back end systems that have the capability for a mobile device such as a cell phone to browse a remote music library for both downloading music and streaming music.

9. From 1997 to 1999, I was a Senior Scientist and Engineer at NBX Corporation, a start-up that made business telephone systems that streamed packetized audio over data networks instead of using traditional phone lines. NBX was later acquired by 3Com Corporation, and the phone system is still available and being used at tens of thousands of businesses or more. As part of my work at NBX, I designed the core audio reconstruction algorithms for the telephones, as well as the packet transmission algorithms. I also designed and validated the core transport protocol used by the phone system. The protocol is used millions of times daily currently.

10. The NBX system had the capability for users to select the ringing tone of their own telephone. This capability was configured through a web server

running on the NBX call processor. The ring tones were stored on the NBX call processor and downloaded as an audio file to the NBX telephone upon bootup or when changed. Two of the company founders and I received US Patent No. 6,697,963 titled "Telecommunication method for ensuring on-time delivery of packets containing time sensitive data," for some of the work I did there.

11. Starting in 2001, I was architect for the next generation of web testing product by Empirix known as e-Test Suite. e-Test Suite is now owned by Oracle Corporation. e-Test provided functional and load testing for web sites. e-Test emulated a user's interaction with a web site and provided web developers with a method of creating various scripts and providing both functional testing (e.g., did the web site provide the correct response) and load testing (e.g., could the web site handle 5000 users on its web site simultaneously). Among Empirix's customers was H&R Block, who used e-Test Suite to test the tax filing functionality of their web site as whether the web site could handle a large expected load prior to the filing deadline.

12. I have also continued to develop web sites for various business projects, as well as setting up web sites on a volunteer basis for various groups that I am associated with.

13. I am the author of several publications devoted to a wide variety of technologies in the fields of electrical engineering and computer science. These publications are listed on my C.V. (attached as Exhibit A hereto).

C. Compensation and Prior Testimony

14. I am being compensated at a rate of \$550 per hour for my study and testimony in this matter. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.

15. I have testified in Federal District Court as an expert witness four times. Most recently, I testified in the *Prism Technologies LLC v. AT&T Mobility LLC* in the District of Nebraska. I have also testified in the *Two-Way Media LLC v. AT&T Inc.* matter in the Western District of Texas and *Verizon v. Vonage* and *Verizon v. Cox* matters, both in the Eastern District of Virginia. I filed expert reports, was deposed, and testified at the hearing in *In the Matter of Certain Digital Media Devices, Including Televisions, Blu-Ray Disc Players, Home Theater Systems, Tablets and Mobile Phones, Components Thereof and Associated Software*, Investigation No. 337-TA-882, U.S. International Trade Commission. I have provided deposition testimony for other cases filed in Federal District Court as well. I also have testified in Federal District Court once as a fact witness.

16. In addition, I have filed declarations in Microsoft v. Telecommunications Systems Inc. (IPR2014-01568 and IPR2015-00193), Microsoft v. B.E. Technology, LLC (IPR2014-00039, IPR2014-00040); Microsoft v. Biscotti Inc., Apple Inc. v. Evolutionary Intelligence, LLC (IPR2014-00086); Twitter, Inc. and Yelp Inc. v. Evolutionary Intelligence, LLC; Neulion Inc. v. Patent Owner; Cisco Systems, Inc. v. AIP Acquisition LLC; Cisco Systems, Inc. v. Constellation Technologies LLC; and Samsung Electronics Co., LTD et al v. Straight Path IP Group, Inc.

D. Information Considered

17. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials. In forming my opinions, I have considered the materials I identify in this report and those listed in Exhibit B.

18. I may rely upon these materials and/or additional materials to respond to arguments raised by Solocron. I may also consider additional documents and information in forming any necessary opinions — including documents that may not yet have been provided to me.

19. My analysis of the materials produced in this investigation is ongoing and I will continue to review any new material as it is provided. This report represents only those opinions I have formed to date. I reserve the right to revise,

supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

II. LEGAL STANDARDS FOR PATENTABILITY

20. In expressing my opinions and considering the subject matter of the claims of the '395 patent, I am relying upon certain basic legal principles that have been explained to me.

21. First, I understand that for an invention claimed in a patent to be found patentable, it must be, among other things, new and not obvious from what was known before the invention was made.

22. I understand the information that is used to evaluate whether an invention is new and not obvious is generally referred to as "prior art" and generally includes patents and printed publications (e.g., books, journal publications, articles on websites, product manuals, etc.).

23. I understand that in this proceeding Verizon Wireless has the burden of proving that the claims of the '395 patent are anticipated by or obvious from the prior art by a preponderance of the evidence. I understand that "a preponderance of the evidence" is evidence sufficient to show that a fact is more likely true than it is not.

24. I understand that in this proceeding, the claims must be given their broadest reasonable interpretation consistent with the specification. The claims

after being construed in this manner are then to be compared to the information in the prior art.

25. I understand that in this proceeding, the information that may be evaluated is limited to patents and printed publications. My analysis below compares the claims to patents and printed publications that are prior art to the claims.

26. I understand that there are two ways in which prior art may render a patent claim unpatentable. First, the prior art can be shown to “anticipate” the claim. Second, the prior art can be shown to have made the claim “obvious” to a person of ordinary skill in the art. My understanding of the two legal standards is set forth below.

A. Anticipation

27. I understand that the following standards govern the determination of whether a patent claim is “anticipated” by the prior art.

28. I have applied these standards in my evaluation of whether claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 of the ‘395 patent would have been anticipated by the prior art.

29. I understand that the “prior art” includes patents and printed publications that existed before the earliest filing date (the “effective filing date”) of the claim in the patent. I also understand that a patent will be prior art if it was

filed before the effective filing date of the claimed invention, while a printed publication will be prior art if it was publicly available before that date.

30. I understand that, for a patent claim to be “anticipated” by the prior art, each and every requirement of the claim must be found, expressly or inherently, in a single prior art reference as recited in the claim. I understand that claim limitations that are not expressly described in a prior art reference may still be there if they are “inherent” to the thing or process being described in the prior art. For example, an indication in a prior art reference that a particular process complies with a published standard would indicate that the process must inherently perform certain steps or use certain data structures that are necessary to comply with the published standard.

31. I understand that, for a piece of prior art to anticipate a claim, it only needs to have the same level of disclosure as the asserted patent. I also understand that it is acceptable to consider evidence other than the information in a particular prior art document to determine if a feature is necessarily present in or inherently described by that reference.

B. Obviousness

32. I understand that a claimed invention is not patentable if it would have been obvious to a person of ordinary skill in the field of the invention at the time the invention was made.

33. I understand that the obviousness standard is defined in the patent statute (35 U.S.C. § 103(a)) as follows:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, 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 at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. I understand that the following standards govern the determination of whether a claim in a patent is obvious. I have applied these standards in my evaluation of whether claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 of the '395 patent would have been considered obvious in December of 1999.

35. I understand that to find a claim in a patent obvious, one must make certain findings regarding the claimed invention and the prior art. Specifically, I understand that the obviousness question requires consideration of four factors (although not necessarily in the following order):

- The scope and content of the prior art;
- The differences between the prior art and the claims at issue;
- The knowledge of a person of ordinary skill in the pertinent art; and
- Whatever objective factors indicating obviousness or non-obviousness may be present in any particular case.

36. In addition, I understand that the obviousness inquiry should not be done in hindsight, but must be done using the perspective of a person of ordinary skill in the relevant art as of the effective filing date of the patent claim.

37. I understand the objective factors indicating obviousness or non-obviousness may include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention; praise of the invention by those in the field; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee proceeded contrary to the accepted wisdom of the prior art. I also understand that any of this evidence must be specifically connected to the invention rather than being associated with the prior art or with marketing or other efforts to promote an invention. I am not presently aware of any evidence of “objective factors” suggesting the claimed methods are not obvious, and reserve my right to address any such evidence if it is identified in the future.

38. I understand the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. I also understand that an example of a solution in one field of endeavor may make that solution obvious in another related field. I also understand that market

demands or design considerations may prompt variations of a prior art system or process, either in the same field or a different one, and that these variations will ordinarily be considered obvious variations of what has been described in the prior art.

39. I also understand that if a person of ordinary skill can implement a predictable variation, that variation would have been considered obvious. I understand that for similar reasons, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using that technique to improve the other device would have been obvious unless its actual application yields unexpected results or challenges in implementation.

40. I understand that the obviousness analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, but instead can take account of the “ordinary innovation” and experimentation that does no more than yield predictable results, which are inferences and creative steps that a person of ordinary skill in the art would employ.

41. I understand that sometimes it will be necessary to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art. I understand that all these

issues may be considered to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

42. I understand that the obviousness analysis cannot be confined by a formalistic conception of the words “teaching, suggestion, and motivation.” I understand that in 2007, the Supreme Court issued its decision in *KSR Int’l Co. v. Teleflex, Inc.* where the Court rejected the previous requirement of a “teaching, suggestion, or motivation to combine” known elements of prior art for purposes of an obviousness analysis as a precondition for finding obviousness. It is my understanding that *KSR* confirms that any motivation that would have been known to a person of skill in the art, including common sense, or derived from the nature of the problem to be solved, is sufficient to explain why references would have been combined.

43. I understand that a person of ordinary skill attempting to solve a problem will not be led only to those elements of prior art designed to solve the same problem. I understand that under the *KSR* standard, steps suggested by common sense are important and should be considered. Common sense teaches that familiar items may have obvious uses beyond the particular application being described in a reference, that if something can be done once it is obvious to do it multiple times, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. As such, the prior art

considered can be directed to any need or problem known in the field of endeavor in December of 1999 and can provide a reason for combining the elements of the prior art in the manner claimed. In other words, the prior art does not need to be directed towards solving the same problem that is addressed in the patent. Further, the individual prior art references themselves need not all be directed towards solving the same problem.

44. I understand that an invention that might be considered an obvious variation or modification of the prior art may be considered non-obvious if one or more prior art references discourages or lead away from the line of inquiry disclosed in the reference(s). A reference does not “teach away” from an invention simply because the reference suggests that another embodiment of the invention is better or preferred. My understanding of the doctrine of teaching away requires a clear indication that the combination should not be attempted (*e.g.*, because it would not work or explicit statements saying the combination should not be made.

45. I understand that a person of ordinary skill is also a person of ordinary creativity.

46. I further understand that in many fields, it may be that there is little discussion of obvious techniques or combination, and it often may be the case that market demand, rather than scientific literature or knowledge, will drive design trends. When there is such a design need or market pressure to solve a problem

and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within their technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious. The fact that a particular combination of prior art elements was “obvious to try” may indicate that the combination was obvious even if no one attempted the combination. If the combination was obvious to try (regardless of whether it was actually tried) or leads to anticipated success, then it is likely the result of ordinary skill and common sense rather than innovation.

III. THE ‘395 PATENT

A. Effective Filing Date of the ‘395 Patent

47. I understand that the ‘395 patent issued from U.S. Application No. 10/223,200 filed August 16, 2002. I understand that the ‘395 application was filed as a continuation of U.S. Application No. 09,518,712 (now U.S. Patent No. 6,496,692), and which application claimed priority to U.S. Provisional Application No. 60/169,158, filed December 6, 1999.

48. I understand that, in order to claim priority to a provisional application, the specification of the provisional application must contain an adequate written description of the invention as claimed in the nonprovisional, and

must enable a person of ordinary skill to practice the invention claimed in the nonprovisional. To satisfy the written description requirement, I understand that each claim limitation must be actually or inherently disclosed.

49. I have reviewed the December 1999 provisional application. It is my opinion that the December 1999 provisional application does not disclose all of the claim limitations in the challenged claims.

50. I have reviewed the December 1999 provisional application. It is my opinion that the December 1999 provisional application does not actually or inherently disclose at least six claim limitations in the challenged claims of the '395 patent: i) "polyphonic audio files" (claims 30, 36, 39, 40); ii) the "enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file" (claims 22, 25, 30, 36, 39, 40); iii) "MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC)" as required by claim 17 or "MPEG, or WAV, or MP3 format" as required by claims 22 and 40; iv) "mobile Internet browser" or "mobile browsing application", or "browsing application program" (collectively, in all challenged claims); v) WAP compliant browsing application (claim 6 and 36); vi) searching the database for audio files using title or description information (claim 25);

51. For example, there is no discussion of polyphonic ringtones, or

polyphonic audio files, or the playing of multiple notes simultaneously. *See* Exhibit 1003 at 0004-08. Thus, claims 30, 36, 39 and 40 are entitled to (at best) only the March 2000 filing date.

52. For example, the “enhanced speaker” limitation does not appear to be disclosed anywhere. There is no discussion of “enhancement” or the “substantially full range of audio sounds.” The provisional application includes a single reference to a “speaker / microphone”, and a few references to “transducer”, but all of these uses appear to be in the context of capturing audio, not reproducing a ringtone, much less a polyphonic ringtone. Exhibit 1003 at 0006-0007. While there is a statement that the device can “play the audio” (*id.* at 0005), there is no discussion of what plays the audio, whether it is for example, a “conventional speaker” or an “enhanced speaker”—nor is there any discussion of quality, the nature of any “enhancement” or any “full range of audio sounds.” Thus, regardless of any other disclosure, claims 22, 25, 30, 36, 39, and 40 are limited to the March 2000 filing.

53. The only reference to MP3 is in connection with converting CD format to MP3 format. *Id.* There are no references to MPEG or WAV formats as is required by claims 22, 25, and 40. Nor is there any reference to the other formats listed in claim 17 (PCM, WMA, and ATRAC). Moreover, there is no apparent linkage between MP3 and MPEG or WAV other than the fact that these are file

formats, but there are many other potential audio file formats as well, but there is no basis in the provisional for understanding that WAV falls into some genus for which the single species of MP3 is sufficient to disclose the entire genus. Because there is no full scope disclosure of the required file formats, claims 22, 25 and 40 are entitled to (at best) only the March 2000 filing date.

54. There is no actual or inherent disclosure of a browser or even browsing—much less a “browsing application program”, “mobile browsing application” or a “mobile Internet browser” that “allows a user of the telephone to browse audio files” as is recited in claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40. Thus, the challenged claims are entitled to (at best) only the March 2000 filing date

55. There is no discussion of a “Wireless Application Protocol” or WAP browser. Thus, claims 6 and 36 are entitled to (at best) only the March 2000 filing date.

56. Nor is there any discussion of searching a database using title or description to find an audio file. *Id.* The only references to “search” or “find” are in the same sentence in connection with “search...to find available memory locations” for storing data. *See id.* at 0005. Thus, claim 25 is entitled to (at best) only the March 2000 filing date.

57. In my view, the full scopes of these limitations are not expressly disclosed, nor are they necessarily disclosed in any passages in the provisional application. Based on my review, it is my opinion that the provisional application fails to sufficiently disclose the invention to establish that Mr. Shanahan possessed the full scope of the subject matter of claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 at any point prior to March 2000.

58. I have therefore used March 3, 2000, as the earliest effective filing date of the '395 patent claims in my analysis. Nevertheless, even if the December 1999 date is used in my analysis, many of the prior art references described below would still invalidate claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39, and 40.

B. Prosecution History of the '395 Patent

59. The application that matured into the '395 patent was filed on August 16, 2002. The application was initially filed with 15 claims. Exhibit 1006 at 0029-0031.

60. About a year later, Mr. Shanahan filed a series of preliminary amendments. On June 27, 2003, an amendment was entered adding new claims 62–78 (Exhibit 1010 at 0447-452), and on July 11, 2003 an amendment was entered adding new claims 79–82 (Exhibit 1010 at 0440-0442). On December 16, 2003, Mr. Shanahan faxed a copy of what was called “a preliminary amendment of 6/20/2003” which was described by the inventor as having been “apparently

inadvertently misplaced.” The 6/20/2003 amendment canceled claims 1-15 and added claims 16-61 (Exhibit 1010 at 0361-0379). Neither the document nor the transmittal letter included any typed date, but there was a handwritten date of “06/20/2003” on the amendment (Exhibit 1010 at 0366). The Patent Office appears to have accepted the amendment.

61. Claim 79, which was added by the amendment entered July 11, 2003, was the first claim in which Mr. Shanahan referenced “polyphonic.” See Exhibit 1010 at 0441. As discussed elsewhere in my opinion, it was in connection with this amendment that Mr. Shanahan stated “support for the polyphonic feature may be found at page 6, lines 31-35 and page 8, lines 19-21 as MP3, WAV, and MPEG, and many MIDI files are polyphonic audio files.” Exhibit 1010 at 0442.

62. Mr. Shanahan filed yet another preliminary amendment which was entered October 14, 2003, which amended some claims but also adding new claims 83-104. Exhibit 1010 at 0391-416. By way of a telephone call, the inventor elected claims 33-49, 68-71 and 74-98. (Exhibit 1010 at 0287). I note that these are the claims that ultimately issued in the ‘395 patent. For example, claim 33 corresponds to issued claim 1. See Exhibit 1010 at 0023 (stating that claims “33-49, 68-71, and 74-98 have been renumbered to 1-9,14-21,10-13,22-26,30-33,27-29,34-46, respectively”).

63. Two more rejections followed. Exhibit 1010 at 0172-78 and 0079-84. In neither of these office actions did the Examiner reference “polyphonic” Exhibit 1010 at 0172-78 and 0079-84.

64. In response to each Office action, the patentee identified a laundry list of claimed features, including “the use of polyphonic audio files,” purportedly not disclosed in the asserted prior art. *See, e.g.*, Exhibit 1010 at 0224-29, 0129-35, and 0056-64. To be clear, Mr. Shanahan used a claim term (namely, polyphonic audio file) that he added by amendment citing as his only support certain file formats, and then argued that this feature was patentable over the cited prior art – even though one of the cited prior art references disclosed one of the very formats that Mr. Shanahan cited as support for polyphonic. *See, e.g.*, Exhibit 1010 at 0231 (Inventor arguing in October 18, 2005 response: “although Mills mentions that MP3 files may be stored in the expansion module, no mention is made of MIDI, WAV, PCM, WMA, or ATRAC audio files”).

65. On June 18, 2007, the Examiner allowed all pending claims without any explanation on June 18, 2007. Exhibit 1010 at 0020-23.

C. The Person of Ordinary Skill In the Art

66. A person of ordinary skill in the December 1999-March 2000 time frame in the art in the field of the '692 patent would have been someone who at a minimum held a bachelor's degree in electrical engineering or computer science

from an accredited institution, or equivalent professional experience, and had at least two years of experience with computer and systems design and preferably a good working knowledge of networking protocols for computer systems (including servers) that support these protocols and techniques.

D. Overview of the Claims of the '395 Patent

67. The challenged claims of the '395 patent claims generally concern methods for browsing and downloading polyphonic ringtones into a wireless telephone for use as an indicia of an incoming communication.

IV. GENERAL ISSUES RELATED TO MY PATENTABILITY ANALYSIS

68. As I explain in more detail below, I believe claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 of the '395 patent are either anticipated or would have been considered obvious by a person of ordinary skill in the art based on a number of prior art references, particularly when the claims are given their broadest reasonable interpretation consistent with the specification.

A. The Claims of the '395 Patent I Am Addressing in this Report

69. The claims of the '395 patent that I am addressing in this report (*i.e.*, 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40) are reproduced below.

Claim 1 of the '395 patent reads:

1. A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for

use as an indicia of an incoming communication, the telephone comprising:

[a] a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files;

[b] a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;

[c] a speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone; and

[d] a programmable memory circuit for allowing the user to optionally store the selected digital audio file for use as an indicia of an incoming communication.

Claim 6 of the '395 patent reads:

6. The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser.

Claim 8 of the '395 patent reads:

8. The wireless telephone of claim 1 configured to allow the user to associate a downloaded digital audio file with a characteristic indicative of a caller such that the associated digital audio file plays when the indicative characteristic is received by the wireless telephone.

Claim 10 of the '395 patent reads:

10. The wireless telephone of claim 1 wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit.

Claim 14 of the '395 patent reads:

14. A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:

[a] a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files;

[b] a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;

[c] processing circuitry configured to receive a selected digital audio file from the communications link; and

[d] a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication.

Claim 17 of the '395 patent reads:

17. The wireless telephone of claim 14 wherein the speaker and processing circuitry is configured to play digital audio files in a format selected from the group comprising: MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC).

Claim 22 of the '395 patent reads:

22. A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:

[a] a communications link capable of connecting to a database in the remote computer that includes a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof;

[b] a display screen and a mobile Internet browser

that allows a user of the wireless telephone to browse at least one of the lists of lists of audio files and view selectable audio files present in the browsed list;

[c] processing circuitry configured to receive a selected one of the audio files from the communications link;

[d] a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication; and

[e] an enhanced performance speaker capable of providing a substantially full range of audio sounds

Claim 25 of the '395 patent reads:

25. The wireless telephone of claim 22 configured to allow the user to search the database for a certain desired audio file using title or description information to aid in locating a desired audio file.

Claim 30 of the '395 patent reads:

30. A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for as an indicia of an incoming communication, the telephone comprising:

[a] a communications link capable of connecting to

a database in the remote computer that includes a plurality of polyphonic audio files;

[b] a display screen and a browsing application program that allows a user of the wireless telephone to browse the polyphonic audio files and select at least one polyphonic audio file therefrom;

[c] processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link;

[d] a programmable memory circuit for allowing the user to optionally store the selected polyphonic audio file for use as an indicia of an incoming communication; and

[e] an enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file when the selected polyphonic audio file is played.

Claim 36 of the '395 patent reads:

36. The wireless telephone of claim 30 wherein the browsing application program is a Wireless Application Protocol (WAP) compliant browsing program.

Claim 39 of the '395 patent reads:

39. A wireless telephone that may be customized by

searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:

[a] a communications link capable of connecting to a database in the remote computer that includes a plurality of polyphonic audio files;

[b] a display screen and a browsing application program that allows a user of the wireless telephone to browse the polyphonic audio files and select at least one polyphonic audio file therefrom;

[c] processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link;

[d] a programmable memory circuit for allowing the user to optionally store the selected polyphonic audio file for use as an indicia of an incoming communication; and

[e] an enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file when the selected polyphonic audio file is played.

Claim 40 of the '395 patent reads:

40. The wireless telephone of claim 39 wherein the polyphonic audio file is selected from the group comprising MP3, MPEG, or WAV files.

B. Interpretation of Certain Claim Terms

70. I understand that, in an *inter partes* review proceeding, claims are to be given their broadest reasonable interpretation in view of the specification.

71. I also understand that, where a patent applicant explicitly defines a term to mean something in the patent disclosure, that definition should typically be used when evaluating the claims. An explicit definition will be something like “a ‘foo’ means ‘a widget that is 4 inches wide by 6 inches long.’”

72. I understand that if no explicit definition is provided for a term in the patent specification, it must be given its plain meaning unless that would be plainly inconsistent with how the term is being used in the claim or the patent specification. I further understand that the reason the PTO uses the broadest reasonable construction standard is that Solocron may ask to amend the claims during the proceeding to make the claim language match what Solocron may argue is the intended meaning of those claims.

73. By contrast, I understand that in a district court litigation, Solocron is not allowed to amend the claim, and in that proceeding, the intended meaning of a term may be considered to be relevant. Because the standards of claim interpretation applied in litigation differ from PTO proceedings, I understand that

any interpretation of claim terms in this IPR is not binding upon Verizon Wireless in any litigation related to the subject patent. *See In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989).

74. I believe most of the language used in the claims does not need to be specifically discussed other than in the course of comparing it to the prior art. Unless otherwise indicated, my analyses herein are based on the broadest reasonable interpretations for all claim terms, which include the following.

1. Capable Of

75. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “capable of” should be construed to mean an ability to perform the stated function without proving that the stated function (or the database or files recited in the stated function) actually were acted upon or existed. That is, I understand that Verizon Wireless has proposed that the term “capable of” does not require actual operation, but rather only an ability to connect to the type of database that is recited in the claims.

2. Allows or Allowing

76. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the terms “allow” and “allowing” should be construed to mean a capability to permit one to perform the stated functions without requiring a showing of actual performance. I understand that this proposed

construction is consistent with what Solocron has proposed in the district court litigation. Exhibit 1038 at 0059.

3. Mobile Browsing Application

77. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “mobile browsing application” should be construed to mean “an application which permits a user to listen to, scan, or observe files while using a mobile device.”

4. Polyphonic Audio Files

78. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, “polyphonic audio file” be construed to mean “an audio file with content that produces two or more tones at the same time.”

79. I understand that Solocron, in the district court litigation, has proposed that “polyphonic audio file” be construed to mean an “audio file having more than one sound.” Exhibit 1071 at 0013. I do not believe that Solocron’s construction is the proper construction given that it is not consistent with the distinctions that the patentee made over Isomursu and Lin and would seemingly read on monophonic content. *See* Exhibit 1007 at 0063-64 (discussed *supra*). In my opinion, one of skill in the art would find that Solocron’s litigation construction does not distinguish between polyphonic and monophonic.

80. Nevertheless, for the reasons discussed below, I believe the cited prior art meets this limitation regardless of what construction is adopted. Of course, Solocron's construction is so broad that it would read on the references that the patentee distinguished during prosecution and would read on virtually any monophonic reference given that a monophonic reference with two notes would meet this.

81. I also understand that Solocron relied on format language (*i.e.*, the listing of certain formats such as MP3, WAV, etc.) as providing support for the recitation of polyphonic audio files in the claims during prosecution of U.S. Patent No. 7,257,395. Although I disagree that the listing of such formats explicitly or inherently discloses polyphony, I note that a number of prior art references recite these same formats. Thus, to the extent that Solocron's recitation of these formats is sufficient, I note that some of the prior art below recites these same formats.

82. Similarly, I understand that Solocron has attempted to rely on passages that relate to sampling "popular songs." I note that, if this disclosure is sufficient, then references like Rizet ("songs", "soundtracks" and "speeches") and Nikkei ("livin' la vida loca" by "Ricky Martin") have the same level of disclosure, as do a number of other references discussed below.

5. Enhanced Performance Speaker

83. I understand that Verizon Wireless has proposed that “an enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file” is indefinite under the Markman analysis that a district court would apply. Solely for purposes of this declaration, I understand that Verizon Wireless has proposed that this term should be construed to mean “a speaker that is capable of playing the audio sounds from the selected polyphonic audio file.”

84. I understand that Solocron has proposed that this term mean “a speaker that can provide a substantially full range of audio sounds,” where “substantially full range of audio sounds” is further construed to mean “the full range of sounds within human hearing, or a range of sounds not appreciably smaller than that range.” Exhibit 1071 at 0028. I do not believe this is an appropriate construction in an *inter partes review* proceeding. In particular, this construction is substantially narrower than the broadest reasonable construction. Nevertheless, even if this construction is adopted, the references below invalidate claims 22, 25, 30, 36, 39 and 40.

6. “speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file ... before downloading ... into the wireless telephone

85. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone” should be construed to mean that the wireless phone allows the user to either visually or audibly scan the file before saving the file to a memory location as specified in claim element 1(d) (which may not be the same memory location involved in the review).

7. Group comprising MP3, MPEG, WAV and/or other files

86. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “the group comprising MP3, MPEG, or WAV files” should be construed to mean “the group including, but not limited to, MP3, MPEG, and WAV.”

87. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “the group comprising: MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC)” should be construed to mean “the group including,

but not limited to, the MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC).”

8. Database

88. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the term “database” should be construed to mean “a collection of logically related data stored together in one or more computerized files.”

9. Speaker and Processing Circuitry Configured to Allow the User to Optionally Review a Selected Digital Audio File with the Mobile Browsing Application Before Downloading the Selected Digital Audio File Into the Wireless Telephone

89. I understand that Verizon Wireless has proposed that, under the broadest reasonable interpretation, the foregoing term should be construed to mean that the user is able to review and copy the downloaded file into a “programmable memory.”

C. Prior Art References

90. I understand that a U.S. patent is a formally published document, and that I may rely on the dates in the patent as to when the patent was filed and when it was granted.

91. I understand that for printed publications, questions can arise whether it was publicly disseminated and when that occurred.

92. I understand that the '395 patent issued from an application filed in August of 2002, as a continuation of an application filed March 3, 2000, and further that it claims priority to a provisional application filed on December 6, 1999. Based on my analysis, I understand that publications that were published before March 3, 2000, and patents or patent applications filed before March 3, 2000, are prior art to the claims.

93. As I stated above, most of the references listed below published before December 1999 and thus are prior art regardless of the date utilized.

1. Exhibit 1070 – Nokia 9110 UM

94. Exhibit 1070 (Nokia 9110 UM or 9110 UM) is the User's Manual for Nokia 9110.

95. The 9110 UM bears on its face a publication date of 1998. Exhibit 1070 at 0002 (copyright notice near top of the page).

96. I understand that 9110 UM was publicly distributed with the Nokia 9110 phone, in both hardcopy form, as well as electronically on a CD that was distributed with the phone no later than about February 1, 1999, and was published via Nokia's website on February 1, 1999. Exhibit 1082 (Declaration of Erin Flaucher ¶¶ 4-16); Exhibit 1065 (Declaration of Jari Valli ("Valli Decl.") ¶¶ 4-6). I understand therefore, that 9110 UM published before December 6, 1999, the earliest asserted priority date of the '395 patent, and it is prior art to the challenged

claims of the '395 patent under 35 U.S.C. § 102(a) and/or § 102(b), depending on the priority date.

2. Exhibit 1083– Nokia 9110 FAQ

97. Exhibit 1083 is a list of “frequently asked questions” regarding the Nokia 9110, which I understand to be a printout of a Nokia.com web page archived May 8, 1999. (“**9110 FAQ**”)

98. I understand that, because the Nokia 9110 FAQ was published via the internet prior to December 6, 1999—the earliest asserted priority date of the '395 patent—it is prior art to the claims of the '395 patent under 35 U.S.C. § 102(a).

3. Exhibit 1014– International Publication No. WO98/025397 to Rizet

99. Exhibit 1014 (Rizet) is a copy of International Patent No. WO98/025397 to Rizet et al.

100. I understand that because Rizet was published on June 11, 1998, which is more than a year prior to December 6, 1999, the earliest possible effective filing date of the '395 patent, it is prior art to the claims of the '395 patent under 35 U.S.C. § 102(b).

4. Exhibit 1081 – U.S. Patent No. 6,492,761 to Perez

101. Exhibit 1081 (Perez) is a copy of United States Patent No. 6,492,761 to Perez.

102. I understand that, because Perez was filed on January 20, 1998, which is prior to December 6, 1999, the earliest asserted priority date of the '395 patent, Perez is prior art to the claims of the '395 patent under 35 U.S.C. § 102(e).

5. Exhibit 1074 –Nikkei Electronics Article (Nikkei)

103. **Nikkei (Exhibit 1074)**, *Music is From Ringing Tones, Game is from Characters*, Nikkei Electronics, November 15, 1999. Nikkei Electronics is a bi-weekly magazine published since 1971. See <http://www.nikkeibp.com/adinfo/printmedia/ne.html>. In this issue, Nikkei Electronics published several articles relating to ringtones, including chapters in particular: Chapter 2 (“Music is from Ringing tones, Game is from characters”) and Chapter 3 (“Realized technology: Maintain size and cost, enhance playback functions of images and sound”). Exhibit 1074 (appearing at pages 116-127 of the original magazine). I understand that this issue was published on November 15, 1999 in hardcopy form in Japan.

104. I understand that because Nikkei published before December 6, 1999, the earliest possible effective filing date of the '395 patent, Nikkei is prior art to the challenged claims of the '395 patent under 35 U.S.C. § 102(a).

6. Exhibit 1096 and Exhibit 1098 – Nokia Press Releases

105. Exhibit 1096 and Exhibit 1098 are press releases issued by Nokia, and I understand that they were issued in June 1999, and February 2000, respectively,

and were distributed widely and publicly available on Nokia's website at <http://www.nokia.com/press/releases/index.html>.

106. I understand that, because Exhibit 1096 published before December 6, 1999—the earliest possible effective filing date of the '395 patent—it is prior art to the challenged claims of the '395 patent under 35 U.S.C. § 102(a).

107. I further understand that, because Exhibit 1098 was published in February 2000, it would only be prior art to the challenged claims of the '395 patent under 35 U.S.C. § 102(a) if, as I conclude above, the claims of the '395 patent are not entitled to the benefit of the December 6, 1999 provisional application.

7. Exhibits 1100 and 1099 – U.S. Provisional Application No. 60/167,179 and U.S. Patent No. 7,065,342 to Rolf

108. Exhibit 1100 (Rolf) is a copy of United States Provisional Patent Application No. 60/167,179, filed November 23, 1999, and Exhibit 1099 is a copy of United States Patent No. 7,065,342, which was filed November 22, 2000, claiming priority to the November 23, 1999 provisional application.

109. I understand that because Rolf claims priority to the earlier filed provisional application, it has a prior art date of November 23, 1999, and thus, is prior art under 35 U.S.C. § 102(e). Citations below are made to Exhibit 1100 – which is the provisional application No. 60/167,179, and thus, Rolf is entitled to the priority date of November 23, 1999.

8. Exhibit 1101 – U.S. Patent No. 6,247,130 to Fritsch

110. Exhibit 1101 is a copy of United States Patent No. 6,247,130, filed January 18, 2000, entitled “Distribution of musical products by a web site vendor over the Internet,” claiming priority to U.S. Provisional Application Ser. Nos. 60/116,918, 60/116,910, 60/116,779, 60/116,917, 60/116,780, and 60/116,778, all of which were filed on January 22, 1999.

111. I understand that, because Fritsch was filed on January 18, 2000, claiming priority to a series of provisional applications, all of which were filed on January 22, 1999, before the earliest possible priority date of the ‘395 patent, Fritsch is prior art to the claims of the ‘395 patent under 35 U.S.C. § 102(e).

9. Exhibit 1103 – U.S. Patent No. 6,661,784 to Nykanen

112. Exhibit 1103 is a copy of United States Patent No. 6,661,784, filed March 2, 1999, entitled “Method in a Communication Network and a Communication Device,” claiming priority to Finnish Patent Application Ser. No. FI 98045, filed March 3, 1998.

113. I understand that, because Nykanen was filed on March 2, 1999, which is before December 6, 1999, the earliest asserted priority date of the ‘395 patent, Nykanen is prior art to the claims of the ‘395 patent under 35 U.S.C. § 102(e).

10. Exhibit 1104 – 1999 WAP Specification

114. Exhibit 1104 is a copy of Version 1.1 of the Wireless Application Protocol Wireless Markup Language Specification (“WAP WML”) dated June 16, 1999 (“1999 WAP Specification”). The 1999 WAP Specification was made publicly available on the Internet in PDF format at <http://www.wapforum.org/>. Exhibit 1104 at 0006.

115. I understand that, because the 1999 WAP Specification was published on June 16, 1999, it is prior art to the claims of the ‘395 patent under 35 U.S.C. § 102(a).

11. Exhibit 1015– U.S. Patent No. 6,018,654 to Valentine

116. Exhibit 1015 is a copy of United States Patent No. 6,018,654, filed October 29, 1996, issued January 25, 2000, and entitled “Method and Apparatus for Downloading Tones to Mobile Terminals” (“Valentine”).

117. I understand that, because Valentine was filed before the earliest asserted priority date of the ‘395 patent, it is prior art to the challenged claims under 35 U.S.C. § 102(e). However, if, as I conclude above, the challenged claims of the ‘395 patent are only entitled to an effective filing date of March 3, 2000, then Valentine is prior art under 35 U.S.C. § 102(a).

12. Exhibit 1078 – SDMI Portable Device Specification, Part I (July 8, 1998) and RIAA Press Release (July 13, 1999) (“SDMI Open Standard”)

118. Exhibit 1078 (SDMI) is a copy of the SDMI Specification and the accompanying press release that was issued July 13, 1999 by the Secure Digital Music Initiative (“SDMI”), a well-known manufacturers’ association of more than 110 members from the “music, consumer electronics and information technology industries,” including Philips, Sony, Sharp, Yamaha, and Samsung. Exhibit 1078 at 0001, 0004-05. The SDMI specification set forth the requirements for a device to be deemed “SDMI-compliant.”

119. I understand that because the SDMI Open Standard published 5 months before the earliest asserted priority date of the ‘395 patent, it is prior art to the claims of the ‘395 patent under 35 U.S.C. § 102(a).

V. PATENTABILITY ANALYSIS OF CLAIMS 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 AND 40 OF THE ‘395 PATENT

120. I am applying the broadest reasonable interpretation of the claim terms, as set forth above, unless otherwise indicated.

121. As an initial matter, I note that there is substantial similarity in claims 22, 30, 39, and 40 of the ‘395 patent. For example, with the exception of what appears to be a typographical error in the preamble of claim 30, claims 30 and 39 are identical to each other.

122. Claim 22 is also very similar to claims 30 and 39. The differences are minor, but I point them out here. First, claims 30 and 39 specify a “polyphonic audio file” (the construction of which I discuss above), whereas claim 22 uses the broader term “audio file” (i.e., a monophonic or polyphonic audio file).

123. Second, claim 22 recites “a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof[.]” Claims 30 and 39, on the other hand, recite “a plurality of polyphonic audio files.” Claim 40, however, which depends from claim 39, adds a limitation similar to that present in claim 22.

124. Third, claim 22 recites “a mobile Internet browser,” whereas claims 30 and 39 more generically recite “a browsing application program.” These are respectively used to “browse” the “plurality of lists of audio files” or the “plurality of polyphonic audio files” that are contained in the “database” as discussed immediately above.

125. Fourth, the “processing circuitry” in claim 22 is “configured to receive a selected one of the audio files,” whereas in claims 30 and 39 it is “configured to supervise receipt of a selected polyphonic audio file.”

126. Finally, the language of the “enhanced speaker” limitation is slightly different. Claim 22 ends by reciting “when one of the selected audio files is played as an indicia of an incoming communication.” Claims 30 and 39, on the other hand, end with the limitation “from the selected polyphonic audio file when the

selected polyphonic audio file is played.” In either case, however, the “enhanced speaker” is “capable of playing the audio sounds from the selected [polyphonic] audio file” as I discuss above.

127. The differences noted above, however, would be considered trivial by a person of ordinary skill in the art. In fact, in some cases, one of the alternatives is subsumed by the other. For example, if a reference discloses “polyphonic audio files” as recited in claims 30 and 39, it necessarily discloses “audio files” as recited in claim 22. Similarly, if a reference discloses “a mobile Internet browser” as recited in claim 22, it also discloses “a browsing application program” within the meaning of claims 30 and 39.

128. For simplicity’s sake, therefore, I will treat claims 22, 30, and 39 together in my analysis below.

A. Nokia 9110 User’s Manual (“9110 UM” or “UM”) (Exhibit 1070)

129. As explained in more detail below, the systems and methods described in UM anticipate and would have made obvious to a person of ordinary skill in the art claims 22, 25, 30, 39, and 40 of the ‘395 patent.

1. Overview of 9110 UM

130. UM describes a system in which a user can select and download audio files and store them in the sounds folder for use as “ringing tones” so that the user can customize the user’s phone.

2. Comparison of UM to Claims 22, 25, 30, 39, and 40 of the '395 Patent

a. Claims 22, 30, and 39

Claim 22 Preamble: “A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:”

Claims 30/39 Preamble: “A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for [use] as an indicia of an incoming communication, the telephone comprising:”

131. The 9110 UM describes a telephone that can be customized by searching, selecting and downloading polyphonic audio files (e.g., audio files having a “.WAV extension and support[s] 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8bit” (Exhibit 1070 at 0143)), which can be played with the “voice recorder” software and the user can then “set them as ringing tones”: “Congratulations on purchasing the Nokia 9110 Communicator. The Nokia 9110 Communicator is a complete communications tool: it is a wireless phone, messaging device, access terminal and a palmtop organizer in one pocketable package.” Exhibit 1070 at 0011.



Figure 1

132. The 9110 UM discloses polyphonic audio files based on the same arguments that the inventor made to the Patent Office in order to get the patent. If, as asserted by the inventor, “MP3, WAV, MPEG, and many MIDI files are polyphonic audio files” (Exhibit 1010 at 0442), then the 9110 UM discloses polyphonic audio files (in the same exact sense) because the 9110 UM teaches using WAV files for ringtones. If identification of a WAV file format was sufficient support for the inventor to rely upon during prosecution to add polyphonic to the claims, then it should be sufficient support to establish that the prior art discloses polyphonic audio files. Thus, because 9110 UM teaches the use of WAV files for ringtones, it discloses polyphonic audio files consistent with the prosecution history of the patent.

133. Moreover, the 9110 UM discloses polyphonic under Solocron’s Litigation construction, meaning “audio file having more than one sound.” For example, the 9110 UM expressly states that “You can also use the *sounds* you have recorded with the Digital voice recorder as ringing tones.” Exhibit 1070 at 0123 (emphasis added). In addition, we know that the phone plays “polyphonic

ringtones” under this construction because the default ringtone played by the phone is the easily-recognized “Grand Valse” tune which has many different notes. See Exhibit 1070 at 0123 (“the default ringing tone Grande valse”). In addition, the 9110 UM teaches how to compose a ringing tone having multiple notes, altered pitches, including for example “D” as well as “D sharp”. See, e.g., *id.* at 0139-0141 (describing how to use the “Composer” starting on page 129); see also the ringtone depicted in Fig. 4 which illustrates a plurality of notes:

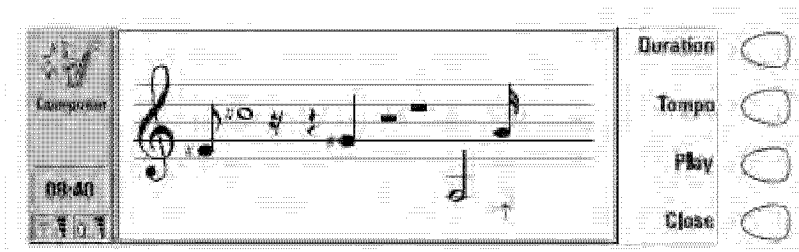


Figure 4

Id. at 0140.

134. Thus, in my opinion, one of skill in the art would understand that the 9110 UM discloses the use polyphonic audio files that meets Solocron’s Litigation construction for polyphonic. This is in addition to meeting the definition of polyphonic based upon the prosecution history discussed above.

135. The 9110 can access the Internet, for searching and downloading files: “The World Wide Web: The Nokia 9110 Communicator supports HTML 3.2....” *Id.* at 0095. UM provides detailed instructions on how to use the web browser on the 9110 to navigate the World Wide Web and to subscribe to “Internet services”.

See, e.g., id. at 0099-0102 (the section is entitled “To navigate in WWW”). In addition, any web page may be stored locally and retrieved: “Tip: To fetch WWW pages stored in the ...Downloaded files folders of the communicator or the memory card use the prefix ‘file:///’ (note: three slashes) instead of ‘http://’.” *Id.* at 0096.

136. The web browsing capabilities on the phone include a search/find feature: “When you have a WWW page open and you press the Menu button, the following options become available: *Add bookmark* – Adds the current address to the Bookmarks list. ... *Find* – You can search for various items, such as words in the WWW page. *Open file* – You can open files from the ... Downloaded files folder.” *Id.* at 0100.

137. The 9110 has software that supports and plays polyphonic audio files: “NOTE: Sound files that the voice recorder can play have a .WAV extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

138. Once downloaded, a file can be copied to the sounds folder so it can be selected as a ringing tone: “When you press the Menu button in an opened folder, the following options become available: *Copy* – You can choose a folder into which the selected document will be copied. ... *Copy to sounds* – You can add the selected tune to the list of ringing tones.” *Id.* at 0110.

139. The 9110 further can assign any downloaded file as a ringing tone: “*Default ringing tone* – You can select one of the tones in the pop-up box or compose a special ringing tone for your telephone with the Composer application. See ‘Composer’ on page 129. You can also use the sounds you have recorded with the Digital voice recorder as ringing tones. See ‘Voice recorder’ on page 132.” *Id.* at 0123.

140. In addition, different ringing tones may be assigned to different contacts, as disclosed: “*Ringing tone* – You can set a specific ringing tone for each contact in the Contacts directory. Select a tone from the list, and press **Select**.” *Id.* at 0052.

141. UM thus shows “*A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the telephone for use as an indicia of an incoming communication*” as required by claims 22, 30, and 39.

Limitation [22a]: “a communications link capable of connecting to a database in the remote computer that includes a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof;”

Limitation [30a/39a]: “a communications link capable of connecting to a database in the remote computer that includes a plurality of polyphonic audio files;”

142. The 9110 telephone described in the 9110 UM includes a cellular communications link that is capable of connecting to databases in remote

computers (e.g., websites of “service providers” that provide services to “subscribers”) that include polyphonic audio files: “The communicator interface includes many organiser and communications applications.” *Id.* at 0012. *See also id.* at 0025 (“The coloured application buttons on the communicator keyboard are used to start the corresponding applications [including] Internet and modem-based applications.”), *Id.* at 0083 (“Internet applications ... World Wide Web (WWW) – A hypertext-based system for finding and accessing resources on the Internet.”).

143. The 9110 uses a radio transmitter to establish a wireless communications link “with remote computers”: “As with any other radio transmitting device, do not touch the antenna unnecessarily when the phone is switched on.” *Id.* at 0146.

144. The 9110 utilizes the GSM network which make it capable of communicating with other devices reachable from the GSM network: “Facts about cellular data transmission[:] The Nokia 9110 Communicator employs the data transmission capabilities of the GSM network to send faxes, short messages and e-mail, and to establish connections with remote computers. Cellular data connections can be made from most locations where your wireless phone operates.” *Id.* at 0014.

145. The 9110 displays the following icon to indicate “An open data connection [to the] ‘Internet’”:



Id. at 0023.

146. Thus, the 9110 is capable of communicating with Internet servers, which may contain databases of audio files, including polyphonic audio files. A person of ordinary skill in the art would also understand that these databases can contain a plurality of lists of such audio files.

147. In addition, as I discuss above, the 9110 UM explains that the audio files usable by the 9110 as ringing tones “have a .WAV extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

148. UM thus shows “*a communications link capable of connecting to a database in the remote computer that includes a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof*” as required by claim 22.

149. UM also shows “*a communications link capable of connecting to a database in the remote computer that includes a plurality of polyphonic audio files*” as required by claims 30 and 39.

Limitation [22b]: “a display screen and a mobile Internet browser that allows a user of the wireless telephone to browse at least one of the lists of lists of audio files and view selectable audio files present in the browsed list;”

Limitation [30b/39b]: “a display screen and a browsing application program that allows a user of the wireless telephone to browse the polyphonic audio files and select at least one polyphonic audio file therefrom;”

150. The 9110 UM describes the 9110’s display and a browsing application that allows a user to browse and select audio files from the Internet. Fig. 5 depicts the display:

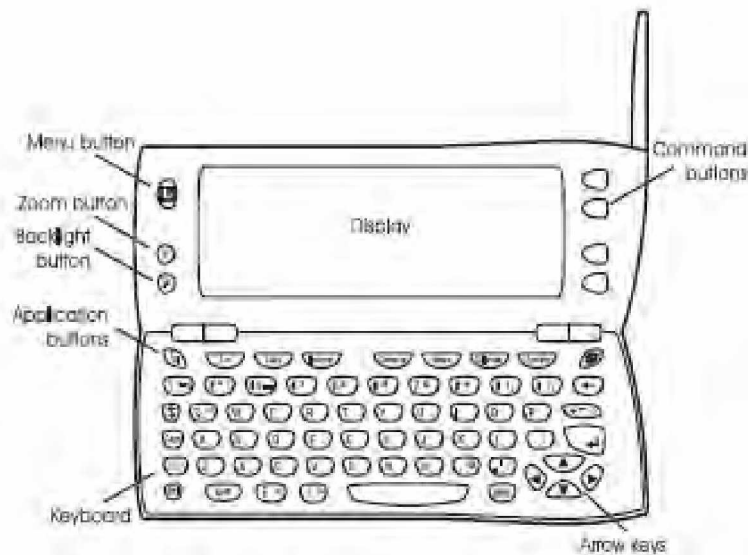


Figure 5

Id. at 0021.

151. UM provides detailed instructions on how to use the web browser on the 9110 to navigate the World Wide Web and to subscribe to “Internet services”. *See, e.g., id.* at 0099-0102 (the section is entitled “To navigate in WWW”).

152. The UM discloses how to set up an Internet access point if the user has not already done so: “[T]his service provides you a convenient way to set up

the internet connection. ... You can subscribe to the Internet services of selected providers in your country directly with your Nokia 9110 Communicator, provided that the data service is activated for your SIM card. See the instructions below.... When the connection has been made, follow the instructions on the display to select a service provider and to subscribe to their Internet services.” *Id.* at 0084.

153. The browser in the 9110 provides the capability “[t]o fetch a WWW page 1) Select an entry in the Bookmarks list or enter a URL in the address field. 2. Press Go.” *Id.* at 0096.

154. When browsing a web page, the 9910 provides the capability to navigate through hyperlinks: “[w]hen the page is on the display, use the arrow keys to scroll the view and to choose hyperlinks and hotspots. Each arrow key press selects the nearest hyperlink or hotspot, or moves the view one line up or down. See Figure 8.”



Figure 8

Id. at 0099. See also 107 (“To use the browser – Press the arrow keys on the keyboard to move from one hotspot to another. To follow a hyperlink, press Fetch. With Change you can tick off boxes and buttons.”); *id.* at 0175 (“A WWW page

may contain hotspots, such as selection lists, text entry fields, and reset/submit buttons, which enable you to input information into the World Wide Web.”).

155. UM also teaches how to use the 9110 in a text mode to access “Operator services” from “network operators”: “With Text Web you can fetch information from the Internet, using SMS. Such information can include for example flight schedules, weather reports and stock news. You can also access services provided by your network operator and Nokia.” *Id.* at 0107.

156. Network operators may also provide services that may be accessed via the 9110: “Operator services - The Operator services allows the network operator to provide various services to the subscribers. The operator-specific items may vary from subscriber to subscriber, and can be updated by the network operator.” *Id.* at 0107.

157. Moreover, the web browser provides the capability for a user to search and select the contents of the website using the “*Find*” function or to browse and select the contents using the “*Save*” function: “When you have a WWW page open and you press the Menu button, the following options become available: ... *Find* – You can search for various items, such as words in the WWW page. ... *Save* – Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.” *Id.* at 0100-0101.

158. UM discloses how to navigate and save content from the web into a local folder: “Folders in the Notes main view are: ... Downloaded files – Documents downloaded with the Internet applications.” *Id.* at 0109; *see also id.* at 0168 (“Note: Downloaded ... recordings may take up significant amounts of memory space.”).

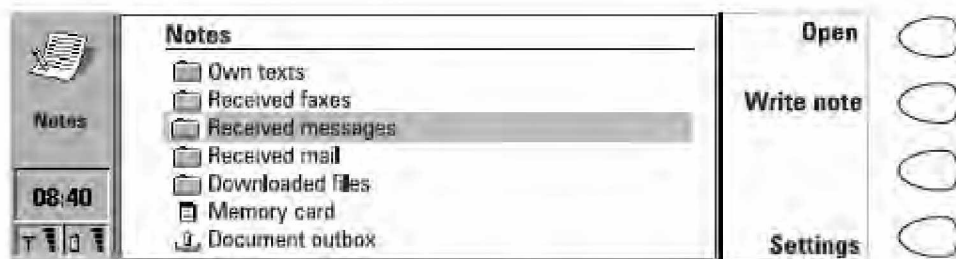


Figure 1

Id. at 0109.

159. Thus, UM teaches a user how to use an Internet browser on a phone to access available remote websites via a wireless communications link and download, as well as save, files into a “downloaded files” directory, which is a programmable memory.

160. UM thus shows “a display screen and a mobile Internet browser that allows a user of the wireless telephone to browse at least one of the lists of lists of audio files and view selectable audio files present in the browsed list” as recited in claim 22.

161. UM thus also shows “a display screen and a browsing application program that allows a user of the telephone to browse the polyphonic audio files

and select at least one polyphonic audio file therefrom” as specified in claims 30 and 39.

Limitation [22c]: “processing circuitry configured to receive a selected one of the audio files from the communications link;”

Limitation [30c/39c]: “processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link;”

162. The 9110 telephone is an intelligent communicator that functions like a portable computer in that it can run preinstalled software as well as software that is downloaded. It has a screen, keyboard and internal processor with software configured to process data transfer protocols utilized by Internet web servers, including HTTP and TCP/IP: “The communicator interface contains many organiser and communications applications. The large keyboard, command buttons and display make using the applications easy.” *Id.* at 0012. Furthermore, as a mobile device, the 9110 contains circuitry to selectively distinguish data carried via radio waves addressed to it from data addressed to other mobile devices in the vicinity: “The Nokia 9110 Communicator employs the data transmission capabilities of the GSM network to send faxes, short messages and e-mail, and to establish connections with remote computers...Cellular data connections can be made from most locations where your wireless phone operates. However, it is recommended that you move the communicator to a location where the strongest possible cellular signal can be obtained. When the signal is strong, data

transmission is efficient.” *Id.* at 0014. Such software for supervising the receipt of data does so for all types of data received, irrespective of what such data contains.

163. Thus, regardless of whether an audio file is downloaded and saved using the Internet browser, received as an SMS message, or received as an application attachment to an email, the 9110 telephone has processing circuitry that monitors receipt.

164. For example, the 9110 monitors for receipt of email and attachments and notifies the user when an attachment is received audibly and visually: “When you receive a short message, the text *Message received* and the [icon] indicator will be displayed and a tone will sound...” *Id.* at 0153.

165. In addition, the receipt of a specific type of data may trigger a specific ringing tone: “*Application tones: Calendar alarm, ... Received SMS, Received mail* – For each of these items you can set a specific ringing tone. You would then be able to tell by the tone whether you have received a fax, or a short message, for example.” *Id.* at 0124.

166. When, for example, an email with an attachment is received, the software provides for options on what the user may do with the attachment: “When you open a received mail, the following commands become available: **Attachments** -- Lists all MIME attachments: text, image audio, video or application. ... When viewing the list of attachments, you may select an

attachment and choose from the following options: **View** – Opens the attachment if there is enough memory and if the message can be opened in the communicator; **Save** –Saves the attachment in the Downloaded files folder....” *Id.* at 0093-94.

167. Further, if a ringtone is downloaded from the Internet, 9110 UM describes two levels of supervising the receipt. First, when surfing the Internet, the 9110 monitors data as it is being received (e.g., “display” shows the “status of the connection” and “how many bytes of the page have been received) and further confirms receipt by making certain tools available after a page has been downloaded: “When the WWW page is being fetched, the line on top of the display shows the status of the connection, the title of the page, and how many bytes of the page have been received.” *Id.* at 0099.

168. Moreover, supervision of receipt is inherent in downloading a file (from the Internet) into a file directory such as the Downloaded files folder: “After the WWW page has been fetched, the following commands become available: *Go* – If there is a link to another WWW page in the currently open page, select the link with the selection frame and press Go to fetch the page.....” *Id.* at 0100. “When you have a WWW page open and you press the Menu button, the following options become available: ... *Find* – You can search for various items, such as words in the WWW page. ... *Save* –Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.”

Id. at 0100. *See also id.* at 0109-0113 (relating to management of documents stored on the phone). Also, the 9110 UM discloses that the phone has electronic circuitry: “Keep it dry. Precipitation, humidity, and liquids contain minerals that will corrode electronic circuits. ...Do not store in cold areas. When the communicator warms up ... moisture can form inside the communicator, which may damage electronic circuit boards. Rough handling can break internal circuit boards.” UM at *Id.* at 0169

169. It is my opinion that based on the discussion above, one of skill in the art would understand that the phone described in UM is a smart phone that has a processor, and further would conclude that UM discloses processing circuitry that both supervises receipt of incoming communications and receives those incoming communications.

170. It is also my opinion that processing circuitry that supervises receipt and receives communications is inherent in the phone described in the UM because it uses folders such as the Downloaded files folder to save downloaded files. The phone necessarily has a processor-based circuit to receive RF signals and convert them to useable information, and necessarily monitors receipt of data to know when a file has been received so that it can update the folders to reflect the newly downloaded file (such as a sound file used for ringtones).

171. UM thus shows “*processing circuitry configured to receive a selected one of the audio files from the communications link*” as recited in claim 22, as well as “*processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link*” as required by claims 30 and 39.

Limitation [22d]: “a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication;”

Limitation [30d/39d]: “a programmable memory circuit for allowing the user to optionally store the selected polyphonic audio file for use as an indicia of an incoming communication;”

172. The 9110 UM describes the 9110 telephone as having two memories that can be programmed with ringing tones—an internal memory (which has a “sounds” folder” which contains a “list of ringing tones”) and a removable “memory card” which can also store sounds. The phone includes an application called “Notes” for managing documents that are downloaded, whether from the Internet or from an attachment (either email or other application). Once downloaded into the “Downloaded files folder,” the “Notes” application gives the user the ability to copy a downloaded file into the “sounds” folder for use as a ringtone: “Notes is used for ... managing various documents stored in the communicator. Note: When you open a document, the document is opened in the appropriate editor or viewer. The available commands vary according to the

editor/viewer. Folders in the Notes main view are: ... Downloaded files – Documents downloaded with the Internet applications.” *Id.* at 0109

173. The “Downloaded files” folder, as well as the “Memory card” folder, are depicted in Fig. 1:

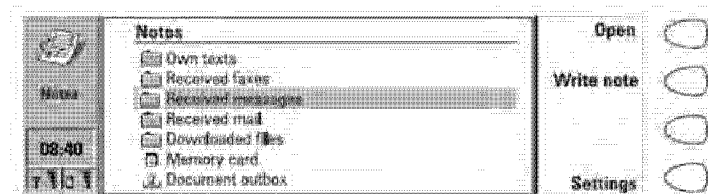


Figure 1

Id. at 0109.

174. UM also teaches how to copy to and from the memory card: “*Copy to memory card* — Copies the selected recording to the memory card. *Copy from memory card* — Copies the selected recording from the memory card to your communicator.” *Id.* at 143.


175. Of course, a file, such as an audio file can be downloaded from the Internet: “When you have a WWW page open and you press the Menu button, the following options become available: ... Find – You can search for various items, such as words in the WWW page. ... Save –Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.” *Id.* at 0100-0101. “To fetch a WWW page 1) Select an entry in the Bookmarks list or enter a URL in the address field...” *Id.* at 0096.

176. If a ringing tone is received as an attachment to an email, the attachment can be saved to the Downloaded files folder and then copied to the sounds folder: “When you open a received mail, the following commands become available: Attachments -- Lists all MIME attachments: text, image, audio, video or application. ... When viewing the list of attachments, you may select an attachment and choose from the following options: View – Opens the attachment if there is enough memory and if the message can be opened in the communicator; Save –Saves the attachment in the Downloaded files folder...” *Id.* at 0093-94. MIME may be used to attach audio files: “MIME [is a] standard Internet format which permits including multiple mail objects in a single message [including, for example] audio fragments.” *Id.* at 0176.

177. Once an audio file is downloaded, it can become available for use as a ringtone by copying the file to the “sounds” folder which adds “the selected tune to the list of ringing tones”: “When you press the Menu button in an opened folder, the following options become available: Copy – You can choose a folder into which the selected document can be copied. ... Copy to sounds – You can add the selected tune to the list of ringing tones.” *Id.* at 0110.


178. The 9110 contains applications to browse the contents of the memory: “System contains the following applications: ...Memory, ... Memory Card tool...” *Id.* at 0123.

179. The memory applications allow the user to show the contents of the phone's programmable memory circuits: "This [Memory] application shows the amount of available free memory for storing data.... Press Details to open up a list of folders and other data in the communicator. The list shows how much memory each of them takes up.... If your memory card is inserted in the communicator, press Memory card to check the amount of available memory in the card." *Id.* at 0128.

180. In addition to the internal memory circuit, the 9110 includes a removable "memory card" which is a second programmable memory circuit that can be used to store "ringing tones": "A memory card may contain documents, contact databases, applications.....etc. When a memory card is inserted in the communicator, the memory card contents are marked with the memory card icon  in the corresponding applications. For example, the documents on the memory card are located in a folder shown in the folders list of the Notes application." *Id.* at 0032.

181. The 9110 UM includes programmable "profiles" that can be set to determine which ringing tone is played when a call is received: "Profiles – With this setting you can modify the profiles. The available profiles are: ... Ringing tone – Determines the ringing tone. To compose your own ringing tone, see 'Composer' on page 139, and to record a ringing tone with the Digital voice

recorder, see ‘Voice recorder’ on page 132.” *Id.* at 0063-64; *see also id.* at 0149 and 0152. In addition, recorded audio may be used as ringing tones: “Tip: With the Voice recorder you can record sounds and speech and set them as ringing tones. See ‘Telephone settings’ on page 53.” *Id.* at 0142.

182. UM teaches how an audio file stored in the sounds folder can be assigned and used as a ringing tone to a contact stored as a contact card: “**Contact card options** – When you press **Options** in an opened contact card, the following options become available: Ringing tone – You can set a specific ringing tone for each contact in the Contracts directory. Select a tone from the list and press Select. The  icon appears at the top of the contract card. *See* Figure 2. In order to use this function, however, the individual ringing tones setting must first be set on. See ‘Telephone settings’ on page 53.” *Id.* at 0052.

183. UM thus shows “*a programmable memory circuit for allowing the user to optionally store the selected [polyphonic] audio file for use as an indicia of an incoming communication*” as required by claims 22, 30, and 39.

Limitation [22e]: “an enhanced performance speaker capable of providing a substantially full range of audio sounds when one of the selected audio files is played as an indicia of an incoming communication.”

Limitation [30e/39e]: “an enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file when the selected polyphonic audio file is played.”

184. The UM describes that the 9110 phone has a “handsfree loudspeaker” that permits the user to adjust the volume as well as play WAV-based sound files that may be stereo or mono. The 9110 has software that supports and plays polyphonic audio files, including “stereo”: “NOTE: sound files that the voice recorder can play have a .WAV extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

185. Based on the inventor’s assertion that “MP3, WAV, MPEG, and many MIDI files are polyphonic audio files,” (Exhibit 1010 at 0442), the 9110 UM discloses polyphonic audio files in the same exact sense that the inventor argued support for polyphonic, namely that WAV files are polyphonic audio files.

186. The 9110 also includes a loudspeaker that allows for handsfree operation. For example, the following icon indicates that “[y]ou have a voice call, and the handsfree loudspeaker and microphone are on. See ‘Handsfree mode’ on page 59.”

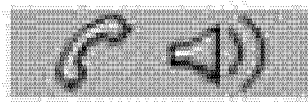


Exhibit 1070 at 0023.

187. The speaker volume may also be adjusted: “[a]fter the audio has been set on, the command changes to Volume. Press Volume to adjust the speaker volume...” *Id.* at 0059. *See also id* at 0147 (raising the volume on the earpiece).

188. The speaker is located on the rear of the device:

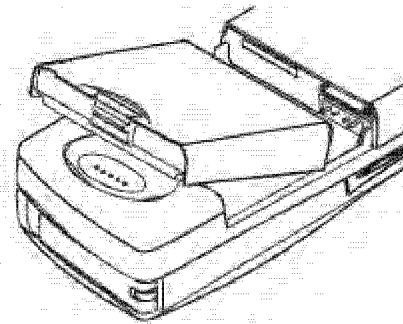


Figure 1

Id. at 0018.

189. The inventor asserted to the Patent Office that WAV files are polyphonic (Exhibit 1010 at 0442), and further that polyphonic ringtones are “high quality.” Exhibit 1007 at 0063-0064 (“The use of high quality audio data such as polyphonic ringtones is an important feature...”).

190. One of ordinary skill in the art would understand from the note that the 9110 “supports” and “plays” “high quality” WAV files that are formatted for “8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit,” (Exhibit 1070 at 0143), the speaker plays the full range of audio file being played, and thus discloses an enhanced speaker.

191. The 9110 UM discloses that the speaker plays the “Grand Valse” default ringtone, Exhibit 1070 at 0123 (“the default ringing tone Grande valse”), various “*sounds* you have recorded with the Digital voice recorder as ringing tones,” *id.* at 0123 (emphasis added), and multiple notes that may be composed using the Composer, *id.* at 0139-0141 (describing how to use the “Composer”

starting on page 129). This would meet the definition of an enhanced speaker using Solocron’s Litigation construction for polyphonic.

192. In my opinion, 9110 UM has as much disclosure of an enhanced speaker as does the ‘395 patent.

193. 9110 UM thus shows “*an enhanced performance speaker capable of providing a substantially full range of audio sounds*” both “*when one of the selected audio files is played as an indicia of an incoming communication*” as required by claim 22 and “*from the selected polyphonic audio file when the selected polyphonic audio file is played*” as required by claims 30 and 39.

194. It is my opinion that UM discloses each and every element of claims 22, 30, and 39 and thus anticipates these claims.

b. Claim 25

Limitation [25]: “The wireless telephone of claim 22 configured to allow the user to search the database for a certain desired audio file using title or description information to aid in locating a desired audio file.”

195. Claim 25 is dependent on claim 22, and as discussed above, 9110 UM discloses each and every element of claim 22.

196. UM teaches that a user can search the contents of an open website using the “Find” function. *See, e.g., id.* at 0100 (“When you have a WWW page open and you press the Menu button, the following options become available: ... Find – You can search for various items, such as words in the WWW page”).

197. UM also teaches users how to use “hotspots, such as selection lists, text entry fields, and reset/submit fields” allowing the user to “input information into the World Wide Web.” *Id.* at 0175.

198. One of ordinary skill in the art would understand these functions (e.g., the Find function and the submission of, for example, search queries via text entry fields) to include searching for desired audio files via title or description as claimed. Indeed, the person of ordinary skill in the art would readily appreciate that title and description searches are among the most efficient ways to search for audio files on the Internet.

199. 9110 UM thus shows “*the wireless telephone of claim 22 configured to allow the user to search the database for a certain desired audio file using title or description information to aid in locating a desired audio file*” as required by claim 25.

200. Thus, it is my opinion that 9110 UM discloses each and every element of claim 25, and therefore anticipates claim 25.

c. **Claim 40**

Limitation [40]: “The wireless telephone of claim 39 wherein the polyphonic audio file is selected from the group comprising MP3, MPEG, or WAV files.”

201. Claim 40 is dependent on Claim 39, and as discussed above, 9110 UM discloses each and every element of Claim 39.

202. Claim 40 is also very similar to Limitation [22a], reciting identical file formats. As discussed above, 9110 UM discloses Limitation [22a].

203. 9110 UM thus shows “*the wireless telephone of claim 39 wherein the polyphonic audio file is selected from the group comprising MP3, MPEG, or WAV files*” as required by claim 40.

204. Thus, it is my opinion that 9110 UM discloses each and every element of, and anticipates, claim 40.

205. To the extent that a reference must use, verbatim, the term “polyphonic” in order to teach “polyphonic audio files” – despite the fact that the ‘395 patent does not do so – the 9110 UM standing alone still renders claim 22, 25, 30, 39, and 40 obvious, because selecting one category (polyphonic audio files) from a universe that contains only two categories (polyphonic and monophonic audio files) is an obvious matter of design choice for the person of ordinary skill in the art.

206. In sum, it is my opinion that claims 22, 25, 30, 39, and 40 are either anticipated by or obvious over the 9110 UM.

B. Nokia 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083)

207. I explain above that claims 22, 25, 30, 39, and 40 are either anticipated by or obvious in view of 9110 UM. Below, I explain how the 9110

FAQ bolsters this conclusion, in particular with respect to the use of WAV files as ringing tones.

1. Overview of 9110 FAQ

208. As discussed above, 9110 FAQ is a publicly available Nokia.com Internet page that was archived on May 8, 1999. Exhibit 1087 at 0008-09 (¶¶ 38-39) and at 0078-0081.

209. 9110 FAQ teaches the user that she can download WAV files from the internet specifically for use as ringtones: “Can you store PC audio .WAV files on the unit? Yes. WAV files can be downloaded from the Internet The WAV files can also be used as ringtones.” Exhibit 1083 at 0004. 9110 FAQ also teaches that the phone plays “Audio files (WAV files as ringtones)” and that the “Voice recorder [can] playback .WAV files.” *Id.* at 0002. 9110 FAQ also further describes that the speaker produces “superb audio”: “[The Nokia 9110 is an] outstanding mobile phone with ... superb audio and voice quality.” *Id.* at 0002.

210. I believe that the 9110 FAQ bolsters the teachings of 9110 UM regarding downloading WAV files from the Internet and using those WAV files as ringtones. Moreover, the 9110 FAQ does exactly what the inventor said the prior art was incapable of doing in the prosecution history (Exhibit 1007 at 0064 (“the prior art systems of record is incapable of playing such high quality audio”))

because it teaches that the 9110 phone plays WAV-based ringtones and has “superb audio ... quality.” Exhibit 1083 at 0002.

211. Moreover, to the extent that a WAV file is not considered to be inherently polyphonic as the inventor contended during prosecution, see Exhibit 1010 at 0442 (discussed above), one of skill in the art would have considered it obvious to use a WAV file to store audio that simultaneously produced multiple tones in order to take advantage of the “superb audio ...quality” of the 9110 speaker as described in the 9110 FAQ.

212. The inventor chose to differentiate his ringtones on the basis of polyphony. The group of potential ringtones would only include monophonic and polyphonic ringtones. The substitution of a polyphonic ringtone for a monophonic ringtone is obvious especially when the format here (WAV) has the capacity to be both monophonic or polyphonic. For at least this reason, one of skill in the art would consider it obvious use polyphonic content in a WAV file for use as a ringtone.

213. Since 9110 UM teaches a phone that supports “.WAV extension [file formats with] 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8bit” audio (Exhibit 1070 at 0143), one of skill in the art would have found further motivation to use an audio file having polyphonic content, because it would take maximum advantage of the supported formats. Thus, it would have been obvious to use a WAV file that

produced audio having multiple simultaneous notes and to set the WAV file as a ringing tone as taught by 9110 UM. *Id.*

2. Combining 9110 UM and 9110 FAQ

214. The 9110 UM and 9110 FAQ relate to the same product (namely, the Nokia 9110). Both documents on their face were intended to publicly distribute information about the 9110 product, and both were produced and distributed by the same company (Nokia) in the same year (1999). For at least these reasons, one of skill in the art would readily combine these references.

215. While it is my opinion, as set forth in detail above, that the 9110 UM alone teaches each and every element of claims 22, 25, 30, 39, and 40, it is also my opinion that the combination of the 9110 UM and 9110 FAQ renders these claims obvious, using either petitioner's proposed construction or Solocron's Litigation construction of polyphonic.

C. Nokia 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083) and Perez (Exhibit 1081)

216. Immediately above, I explain my conclusion that claims 22, 25, 30, 39, and 40 are rendered obvious by the combination of 9110 UM and 9110 FAQ. Below, I explain how the additional teachings of Perez relate to this conclusion, in the event that Solocron's Litigation construction for the "enhanced speaker" limitation is adopted.

1. Overview of Perez

217. Perez (Exhibit 1081) is a patent that issued to the cell phone manufacturer Ericsson, based on an application that was filed January 20, 1998—almost two years before the earliest claim of priority in the ‘395 patent.

218. I understand that Solocron contends that the “enhanced speaker” limitation should mean “a speaker that can provide a substantially full range of audio sounds,” where “substantially full range of audio sounds” is further construed to mean “the full range of sounds within human hearing, or a range of sounds not appreciably smaller than that range.” Exhibit 1071 at 0028. As I said above, I do not believe this is an appropriate construction for this term. In particular, this construction is substantially narrower than the broadest reasonable construction. Nevertheless, even if this construction is adopted, Perez teaches a range that is greater than the total known range of human hearing (which is generally considered to be 20Hz to 20,000 Hz, but of course, the range reduces considerably with the age of the listener).

219. Perez is relevant to the “enhanced performance speaker” limitation. Perez discloses actual details of how to build and make a cell phone speaker that is capable of producing a range of frequencies from 10Hz to 30,000 Hz. Exhibit 1081 at 3:66-4:9.

220. Perez describes a known problem with cell phone speakers which is the electromagnetic energy associated with the cellular transmissions generates “unwanted noise in the speakers”: “The EMI which causes unwanted noise in the speakers of modern communication devices, such as cellular phones, is largely generated by the analog and digital circuitry associated with the means for driving said speakers. In cellular communication systems several different mobile units share the same set of frequency channels at the same time.” *Id.* at 2:20-25.

221. Perez “discloses a piezoelectric transducer that is capable of being directly driven by a digital signal.” Exhibit 1081 at 3:41-42. “A digitally driven piezoelectric transducer avoids the problems associated with EMI because it eliminates the need for additional analog circuitry to create sound audible to humans.” *Id.* at 2:59-62. “A further benefit of piezoelectric elements is that they consume a little amount of power compared to the amount of acoustic pressure they can generate.” *Id.* at 1:51-54.

222. “The acoustic sound energy is designed to be intensified by the resonant cavity 18 in the range of about 10 HZ to about 30 kHz. This frequency range is chosen because it covers the spectrum of frequencies human beings are capable of hearing.” 3:66-4:3. See also *id.* at claim 3 (“The digital piezoelectric transducer of claim 2 wherein the acoustic energy is intensified by said resonant cavity in the range of about 10 HZ to about 30 kHz”).

223. Perez intended his speaker to be used in cellular phones: “[A] need exists in the electronic industry to replace analog driven speakers in various products, including cellular phones, with purely digitally driven speakers which are less susceptible to EMI. The present invention discloses a digitally driven piezoelectric transducer which is not dependent on analog circuitry to produce audible sound, thereby eliminating the problems with EMI and the need for additional analog circuitry.” *Id.* at 2:40-47. “Unlike conventional speaker systems, a piezoelectric element is capable of creating a sound without a fragile or moving coil.” *Id.* at 1:40-42.

2. Combining 9110 UM, 9110 FAQ, and Perez

224. One of skill in the art would have readily combined 9110 UM and 9110 FAQ for the reasons stated above in connection with the analysis of claims 22, 25, 30, 39, and 40 based on the same combination.

225. To the extent that Solocron’s Litigation construction for the “enhanced speaker” limitation applies, the ordinarily skilled artisan would readily be motivated to augment the teachings of the combination of 9110 UM and 9110 FAQ with Perez. In particular, Perez expressly recognizes that “cellular phones are an ideal application for [its] transducers” in order to “eliminate the noise associated with analog speaker systems of the prior art.” *Id.* at 6:8-11. In other words, Perez expressly provides both the suggestion and the motivation to combine

his improved speaker with cellular phones, such as the Nokia 9110 described in the 9110 UM and 9110 FAQ.

226. Thus, even before Mr. Shanahan filed his patent application, one skilled in the art would have known the desirability of incorporating an “enhanced performance speaker” such as shown in Perez into cellular telephones, at least because such a speaker “avoids the problems associated with EMI,” consumes less power, provides superior performance, and reduces circuitry for the speaker.

227. Therefore, to the extent that the Board adopts Solocron’s Litigation construction for the “enhanced speaker” limitation, despite there being no support for this construction in the ‘395 patent, Perez supplies these additional teachings, such that the combination of 9110 UM, 9110 FAQ, and Perez renders claims 22, 25, 30, 39, and 40 obvious.

D. Nokia 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083), Perez (Exhibit 1081), and Nikkei (Exhibit 1074)

228. In the preceding section, I set forth my analysis of the combination of 9110 UM, 9110 FAQ, and Perez with respect to claims 22, 25, 30, 39, and 40. As explained in more detail below, these claims are also obvious over the combination of 9110 UM, 9110 FAQ, Perez, and Nikkei, particularly in the event that the use of the specific word “polyphonic” is deemed necessary.

1. Overview of Nikkei

229. As discussed above, on November 15, 1999, Nikkei Electronics published several articles in a single issue relating to ringtones, including in particular, Chapter 2 (“Music is from Ringing tones, Game is from characters”) and Chapter 3 (“Realized technology: Maintain size and cost, enhance playback functions of images and sound”). Exhibit 1074 at 0002-0007 (appearing at pages 116-127 of the original magazine).

230. Figure 4 of Nikkei describes the “Evolution of Services” which recognized how the “success of ringing tones produces demand for high sound quality” and that as of the “End of 99” phones were “function[ing] to simultaneously reproduce 3 to 4 sounds”, that by 2000, phones would “function to simultaneously reproduce 16 to 32 sounds” and by 2001, phones would include “audio decoding function [for] MP3.” Exhibit 1074 at 0003 (p. 119). Nikkei recognized that a shift from monophonic ringtones to simple polyphonic ringtones had already begun and that the future would bring even higher degrees of polyphony. Exhibit 1074 at 0003 (pp. 118-119). Nikkei’s Figure 5 is an illustration of network download speed relative to file size, and reflects that the ability to download MP3 music for use on a phone was simply a matter of waiting for the carrier networks to increase in download speeds sufficient to permit efficient download times:

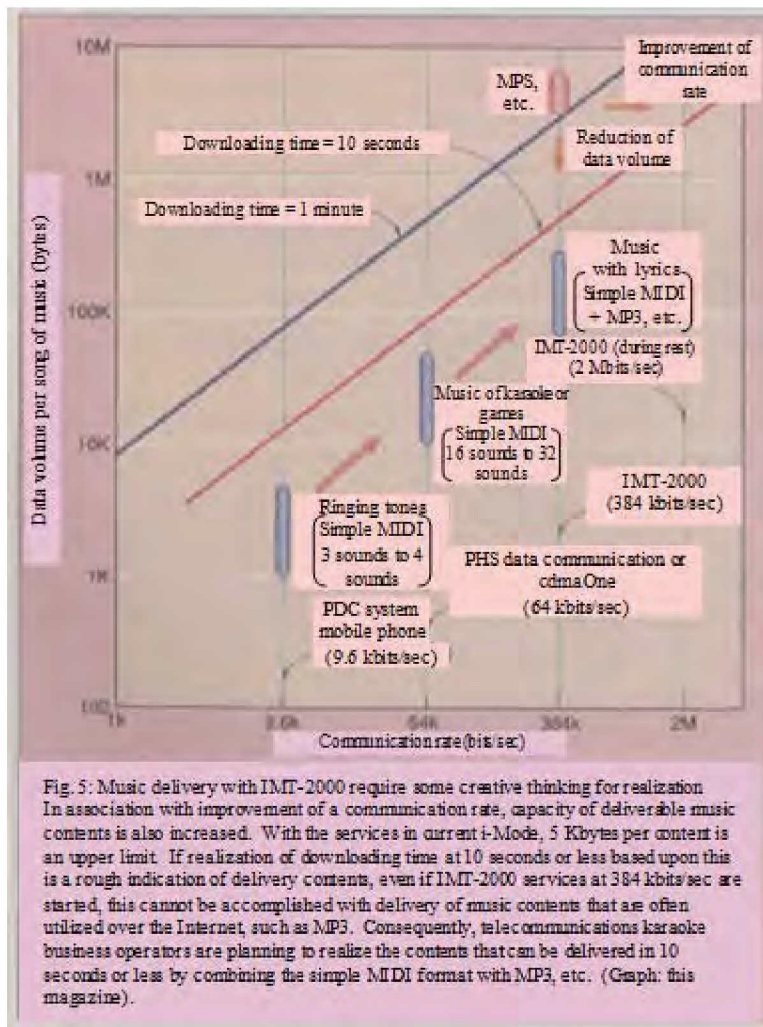
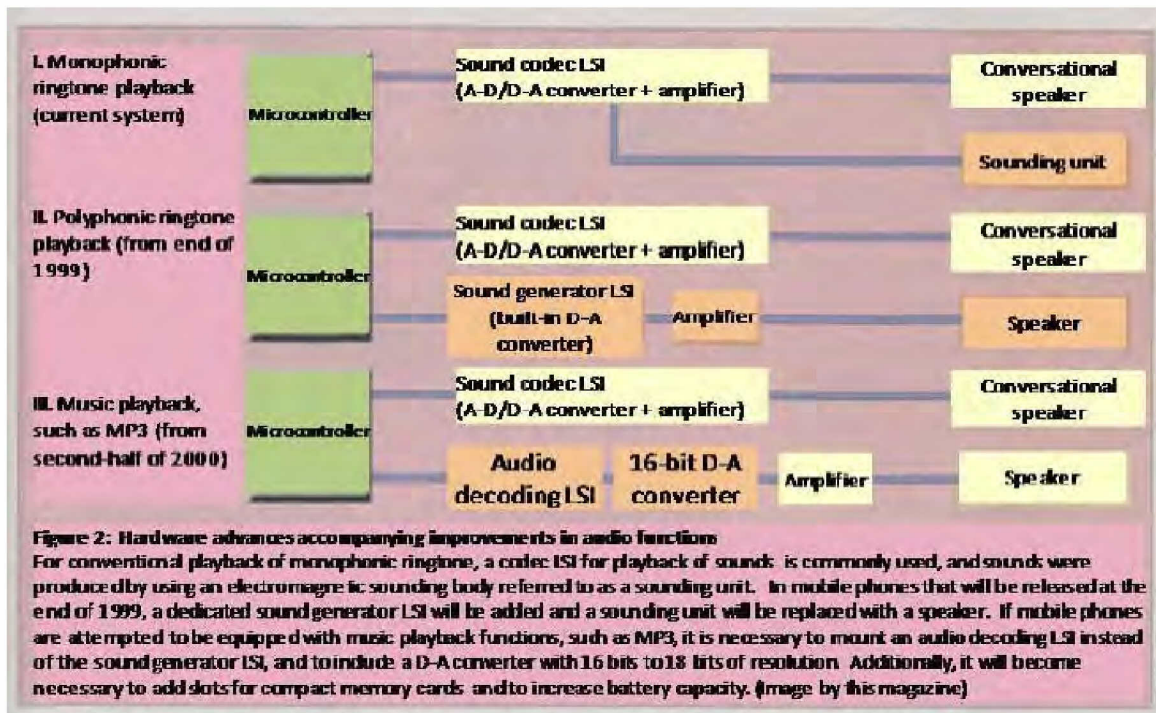


Fig. 5: Music delivery with IMT-2000 require some creative thinking for realization. In association with improvement of a communication rate, capacity of deliverable music contents is also increased. With the services in current i-Mode, 5 Kbytes per content is an upper limit. If realization of downloading time at 10 seconds or less based upon this is a rough indication of delivery contents, even if IMT-2000 services at 384 kbits/sec are started, this cannot be accomplished with delivery of music contents that are often utilized over the Internet, such as MP3. Consequently, telecommunications karaoke business operators are planning to realize the contents that can be delivered in 10 seconds or less by combining the simple MIDI format with MP3, etc. (Graph: this magazine).

Exhibit 1074 at 0004 (p. 120).

231. Nikkei even publishes a list of 20 popular ringtones, many of which appear to be polyphonic because they reference not only the song, but also the vocalist, including for example, “Livin’ la vida loca [by] Ricky Martin” and “My heart will go on [by] Celine Dion” *Id.* at 0002 (p. 117).

232. Fig. 2 of Chapter 3 is also insightful because it provides further details on “Hardware advances accompanying improvements in audio function”:



Id. at 0006 (p. 125).

233. Figure 2 from page 125 of Nikkei (shown above) and its accompanying description teach everything one skilled in the art needs to know to be a part of the evolution of ringtones in 1999. Exhibit 1074 at 0006 (p. 125). Nikkei teaches evolution from “monophonic ringtone” to “polyphonic ringtone” and then to “MP3 music playback” would happen rapidly and projects that MP3 playback phones will be on the market by mid-2000. Nikkei further describes that the hardware will be “advanced” by replacing the conventional “sounding unit” with an actual “speaker”, sound codecs and audio decoding circuitry to accommodate MP3 music. The surrounding pages are devoted to discussing this

“evolution” and the new speaker technologies (e.g., “sound generator LSI”) that were to be added to mobile phones by the end of 1999.

234. Nikkei even discloses use of MIDI formats with certain LSI devices, which teaches using synthesized polyphonic ringtones. See Exhibit 1074 at 0003 (p. 119).

2. Combining 9110 UM, 9110 FAQ, Perez, and Nikkei

235. One of ordinary skill in the art would have readily combined 9110 UM, 9110 FAQ, and Perez for the reasons stated above.

236. It is my opinion that the evolution discussed in Nikkei is typical of the portable electronics industry that absorbs known technology as the underlying electronics, and the networks upon which they operate, improve.

237. As discussed above, it is my opinion that the combination of 9110 UM, 9110 FAQ, and Perez yields the invention of claims 22, 25, 30, 39, and 40. To the extent however, that an express teaching of the need or desire for polyphonic ringtones is required, Nikkei establishes indisputably that polyphonic ringtones already existed and were in significant demand. WAV format clearly supports polyphonic content, and thus, Nikkei provides a clear teaching that the industry and consumer demand is growing for polyphonic ringtones. It would have been obvious to utilize polyphonic content for a WAV based ringtone which could be played on the 9110 phone, including the speaker of Perez, to reproduce the

polyphonic audio with “superb audio ... quality” as taught by 9110 FAQ, which further answers the “demand for high sound quality” referenced in Nikkei (Exhibit 1074 at 0003 (p. 119 (text for Fig. 4))).

238. The trends discussed in Nikkei are not specific to any one technology, but instead are generally expressed with respect to the cell phone industry as a whole, and one of skill in the art would readily have incorporated the teachings of Nikkei as a simple matter of technology adoption driven by market forces.

239. Similarly, the improvements discussed by Perez are not to any one phone technology, but instead are generally expressed as improvements for use with any cell phone.

240. Thus, one of skill in the art would have readily combined 9110 UM, 9110 FAQ, Perez, and Nikkei, both for these reasons, and for the reasons discussed above for combining 9110 UM, 9110 FAQ, and Perez. As such, it is my opinion that the combination of 9110 UM, 9110 FAQ, Perez, and Nikkei renders claims 22, 25, 30, 39, and 40 obvious, under any of the above-discussed constructions for polyphonic, and any of the above-discussed constructions of the “enhanced speaker” limitation.

E. 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083) and Nokia Press Releases (Exhibits 1096, 1098)

241. As discussed in greater detail below, the combination of 9110 UM, 9110 FAQ, and Nokia Press Releases renders claim 36 obvious.

1. Overview of Nokia Press Releases

242. The Nokia Press Releases are news releases issued by Nokia in June 1999 (Exhibit 1096) and February 2000 (Exhibit 1098). Both relate generally to Wireless Application Protocol (WAP) browsing.

2. Obviousness as to claim 36

Limitation [36]: “The wireless telephone of claim 30 wherein the browsing application program is a Wireless Application Protocol (WAP) compliant browsing program.”

243. Claim 36 is dependent on Claim 30, and as discussed above, the combination of 9110 UM and 9110 FAQ discloses each and every element of Claim 30. The Nokia Press Releases contain teachings relevant to the additional limitation “wherein the browsing application program is a Wireless Application Protocol (WAP) compliant browsing program” recited in claim 36.

244. For example, Nokia’s February 2000 release (Exhibit 1098) teaches that “[t]he Nokia 9110i Communicator will continue to support the Internet browsing and e-mail services, but the add-on WAP application will provide users with access to a new emerging group of mobile Internet services.” Exhibit 1098 at 0001. This is at least as much detail regarding WAP as the ‘395 patent contains.

245. Nokia’s June 1999 press release (Exhibit 1096) contains a similar disclosure: “The Nokia WAP Browser is a software product that can be ported and integrated to wireless devices, like mobile phones.” Exhibit 1096 at 0001. “The

Nokia browser software provides ... support for secure data transmission ... and the WAP Protocol Stack for transporting data over wireless bearer services.” *Id.*

246. One of skill in the art would have readily combined 9110 UM and 9110 FAQ for the reasons stated above in connection with the analysis of claim 30 based on the same combinations.

247. One of skill in the art would further have been motivated to include the Nokia Press Releases with the combination of 9110 UM and 9110 FAQ. All three documents relate to the same basic product, namely, Nokia phones, and to specific software (i.e., the Internet browser) on that device. In fact, the February 2000 Press Release (Exhibit 1098) pertains to the Nokia 9110i, which is a variant of the device described in 9110 UM and 9110 FAQ. In addition, at the same time as the February 2000 Press Release (Exhibit 1098), Nokia also announced that “uses of the existing 9110 Communicators will be able to upgrade their devices to be WAP compatible with an accessory package.” Exhibit 1097 at 0001.

248. For all of these reasons, it is my opinion that the person of ordinary skill in the art would readily have combined 9110 UM, 9110 FAQ, and the Nokia Press Releases. Because this combination teaches each and every element of claim 36, it renders that claim obvious.

F. 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083), Nikkei (Exhibit 1074), and Nokia Press Releases (Exhibits 1096, 1098)

249. Immediately above, I explain my conclusion that the combination of 9110 UM, 9110 FAQ, and the Nokia Press Releases renders claim 36 obvious.

250. I have also explained that Nikkei supplies additional teachings, including express disclosure of “polyphonic audio files” used as ringing tones and improved speakers to play the same, which are relevant to claim 30. Because claim 36 depends from claim 30, these teachings are also relevant to claim 36.

251. Finally, I have set forth in detail why a person of ordinary skill in the art in 1999 would have been motivated to combine 9110 UM, 9110 FAQ, Nikkei, and the Nokia Press Releases.

252. Because this combination discloses each and every element of claim 36, it is my opinion that claim 36 is obvious over the combination of 9110 UM, 9110 FAQ, Nikkei, and the Nokia Press Releases.

G. 9110 UM (Exhibit 1070) in combination with 9110 FAQ (Exhibit 1083), Nikkei (Exhibit 1074), Perez (Exhibit 1081), and Nykanen (Exhibit 1103)

253. I have already set forth a comparison of the combination of 9110 UM, 9110 FAQ, Nikkei, and Perez to claim 30 (and therefore to claim 36, which, as noted above, depends from claim 30), including an explanation of why the person of ordinary skill in the art would have been motivated to combine these references.

254. The combination of 9110 UM, 9110 FAQ, Perez, and Nikkei does not, however, disclose the additional limitation of claim 36: “wherein the browsing application program is a Wireless Application Protocol (WAP) compliant browsing program.” Nykanen does.

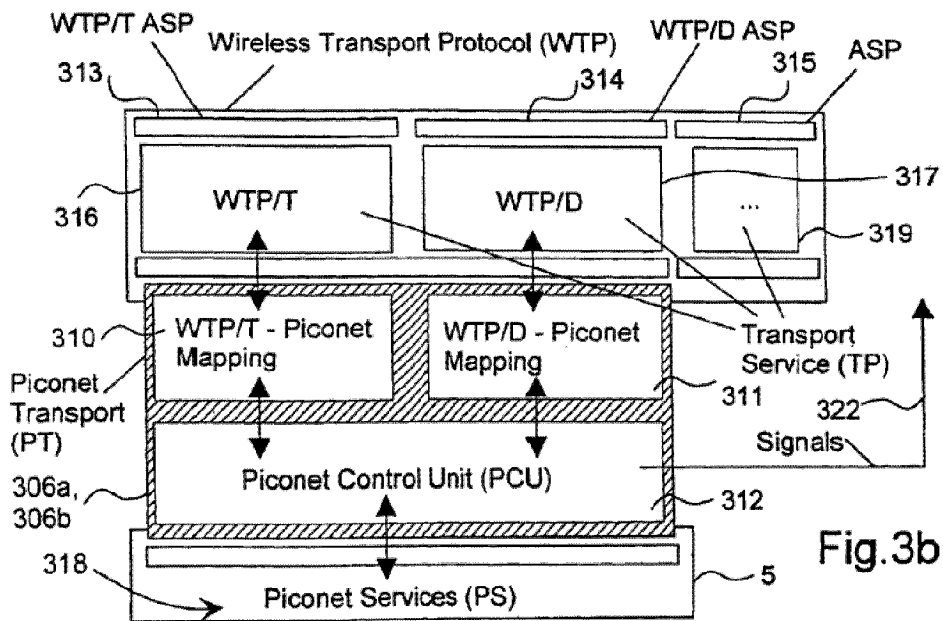
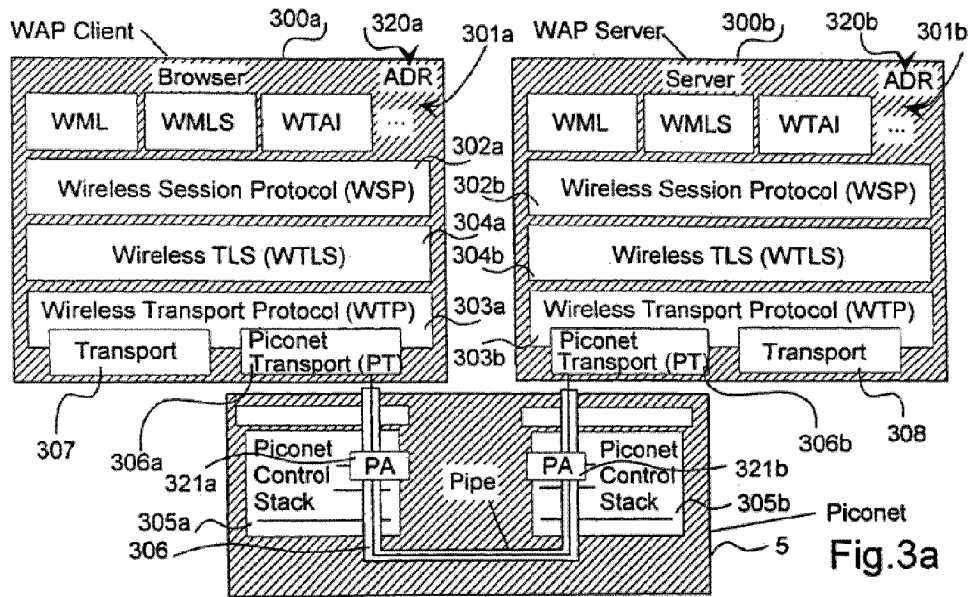
1. Overview of Nykanen

255. Nykanen was filed on March 2, 1999 and issued on December 3, 2003. Nykanen also claims priority to a Finnish patent application filed on March 3, 1998.

256. Nykanen demonstrates that it was known at the time Mr. Shanahan filed his patent application, including to Nokia specifically, to use WAP browsers on mobile stations to download content from the Internet. *See* Exhibit 1103 at 3:9-12 (“The purpose of the invention is particularly to define a system for communication between a WAP server and a WAP client complying with the WAP application”); *id.* at 3:26-31 (“[D]ifferent applications and information is presented by means of standardized presentation formats which are browsed e.g. by means of known WWW browsers. Thus, the servers and information in the WWW network are named according to a Uniform Resource Locator (URL) address complying with the Internet standard.”).

257. In fact, Nykanen contains extensive detail about WAP browsers that is entirely missing from the ‘395 patent. It teaches numerous wireless networks,

including GSM, CDMA, and IR. *Id.* at 2:41-43, 4:25, 4:52, and 4:67. In addition, Figures 3(a), 3(b), and 4 show transmissions using the various elements of the WAP protocol:



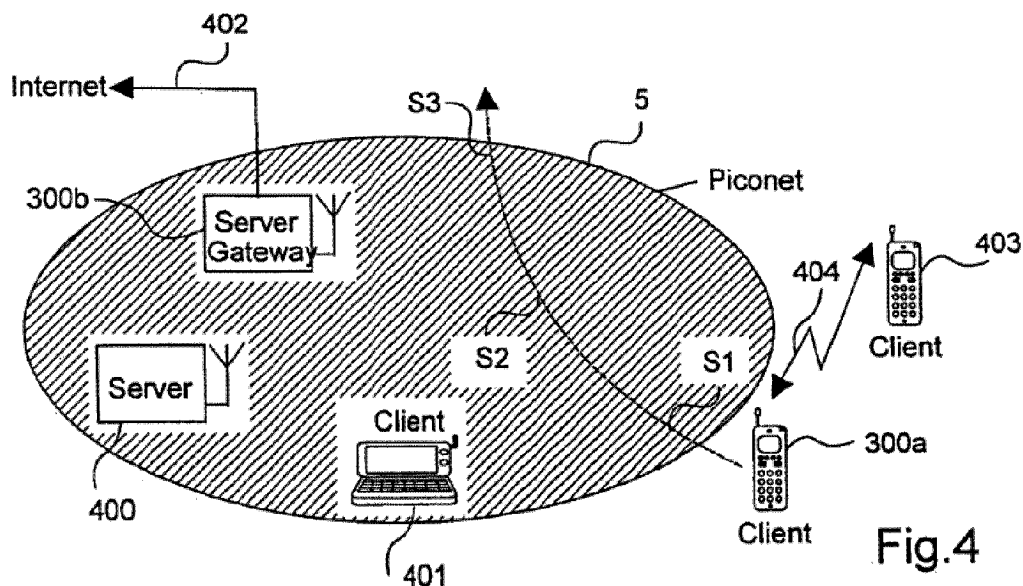


Fig.4

258. Nykanen also details various transmissions to “WAP clients” including WML browsers. *Id.* at 4:38-45; *see also id.* at 12:11-13:65, which describes the transmission of data from WAP servers to WAP-enabled mobile stations or clients with WAP browsers.

2. Combining Nykanen with 9110 UM, 9110 FAQ, Perez, and Nikkei

259. Nykanen is readily and logically combinable with 9110 UM and 9110 FAQ for substantially the same reasons that the Nokia Press Releases are so combinable. Similar to the Nokia Press Releases, Nykanen expressly references the “Nokia 9000 Communicator” as an exemplary “mobile station” suitable for its teachings. *See, e.g., id.* at 1:63-65. The 9110, described in the 9110 UM and 9110 FAQ, is a related product to the Nokia 9000. Moreover, the 9110 UM, 9110 FAQ, and Nykanen all come from the same company (Nokia) and all generally discuss

similar topics, including the provision of data to applications on mobile phones using wireless networks and Internet browsers.

260. As explained in detail above, Nikkei describes the general state of the mobile phone art in 1999, and is also readily and logically combinable with the Nokia-based references described herein in any combination in order to supply, as necessary, express references to polyphonic audio files used as ringtones and improved speakers to play the same.

261. As also explained above, Perez is readily and logically combinable with the Nokia-based references, and with Nikkei, because it expressly contemplates that its piezoelectric transducer can be used in cellular phones.

262. Thus, it is my opinion that a person of ordinary skill would have been motivated to combine 9110 UM, 9110 FAQ, Nikkei, Perez, and Nykanen, and that the combination would teach each and every element of claim 36. I thus conclude that claim 36 is obvious over the combination of 9110 UM, 9110 FAQ, Nikkei, Perez, and Nykanen.

H. Rizet (Exhibit 1014) in combination with either Rolf (Exhibits 1099 and 1100) or Fritsch (Exhibit 1101)

263. As discussed below, Rizet describes “high quality” ringing tones in the forms of “melody, song, music,” and “soundtracks.” Rizet does not use the word “polyphonic”—nor does the specification of the ‘395 patent, for that matter—but Rizet does reference a “high quality” ringtone. It is my opinion,

discussed in detail below, that claims 22, 25, 30, 39, and 40 are obvious over Rizet in view of either Rolf or Fritsch.

1. Overview of Rizet

264. Rizet is a published PCT application which Philips Electronics N.V. (“Philips”) filed November 13, 1997—more than two years before the earliest priority application for the ‘395 patent was filed. Rizet was not cited during prosecution of the ‘395 patent. Notably, Rizet uses strikingly similar language to the ‘395 patent, including for example, “user-defined” ringing tones (as referenced in the title and specification of the ‘395 patent), “communication link”, “remotely situation database” (compared to “database in remote computer”).

2. Comparison of Rizet to Claims 22, 25, 30, 39, and 40 of the ‘395 patent

a. Claims 22, 30, and 39

Claim 22 Preamble: “A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:”

Claims 30/39 Preamble: “A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the wireless telephone for [use] as an indicia of an incoming communication, the telephone comprising:”

265. Rizet discloses a telephone (e.g., a “cellular telephone”) that can be programmed with “user-defined forms of ringing information” (Exhibit 1014 at

0004) (e.g., “melody, song, music,” and “soundtracks”) : “A telecommunication device is disclosed comprising a ringing information memory means, and a ringing information memory updating means for updating the ringing information content [in] the form of ... melodies.” Exhibit 1014 at 0001 (Abstract).

266. Rizet’s claims are even directed to a cellular telephone: “the telecommunication device is ... a cellular telephone.” *Id.* at 0007 (claim 9).

267. Rizet disclose that ringing information of high quality, including songs and music: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone [by providing] a public database containing a variety of alternative forms of ringing information ...such as a melody, song, music....” *Id.* at 0003-0004 (1:27-2:6).

268. Rizet discloses that such ringing information is stored in a database: “The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24). See also Rizet claim 4 (wherein “the ringing information memory updating means is connected to selection means coupled to the database for selecting user defined forms of ringing information”). *Id.* at 0007.

269. One of skill in the art would understand that the information being downloaded is a digital audio file. For example, Claim 1 is directed to

“Telecommunication device comprising a ringing information memory and a ringing information memory updating means coupled to the ringing information memory, characterised in that the ringing information updating means comprises a public database containing a variety of alternative forms of ringing information.” Id. at claim 1. Claim 6 explains that “the ringing information comprises audio and/or video information” and claim 7 explains that the “the audio information comprises at least one melody...” Id. (claims 6-7); see also id at 4:6-8 (“In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded hear the melody, speech etcetera, before being downloaded.”). Rizet also explains that the “[ringing] information or data” is stored in the “ringing tone memory” and is updated by the “ringing information update means”: “Each telephone 3 is provided with a ringing information memory 4, wherein information or data is stored about the sound a telephone makes when it rings. Each telephone 3 is also provided with ringing information memory updating means 5, which means 5 are connected to the memory 4, in order to be able to update the content of the memory 4. The memory updating means 5 is connected via the communication link 2 to a database 6, which is present somewhere in the network 1. The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” Id. at 3:18-24. Rizet also explains that a

microprocessor 10 is coupled to the ringing information memory 4 such that the microprocessor reads data from and writes data to the memory) (Exhibit 1014 at 0005-0006 (3:31-4:14) and that the ringing tone information is stored in a database. Rizet also speaks in terms of reducing “the amount of memory capacity.” The mobile device is, for example, a “conventional ... cellular phone.” Exhibit 1014 at 0007 (5:25-26). Rizet also explains that “the known telecommunication device comprises locally provided ringing information updating means such as a microphone, a serial input interface, and memory registration means.” Exhibit 1014 at 0003 (1:13-15). One of skill in the art would understand that a serial input interface is a digital interface. Based on this information, one of skill in the art would understand that Rizet teaches the downloading of digital audio files for downloading in the memory of a telephone.

270. One of skill in the art would consider the ringing information stored in the database constitutes digital audio files because the ringing information comprises audio information or data (see, e.g., claim 6 (“ringing information comprises audio ... information) that is used by the phone’s “audio producing means” (see, e.g., claim 8 (“device comprises audio producing means”) to produce an audible “high quality” (*id.* at 0003 (1:26)) ringing tone.

271. As discussed in greater detail below, Rizet also describes in connection Figure 2 how to search and select ringing information from a database

for download into the ringing information memory. *See id.* at 0005-0006 (3:31-4:17).

272. Rizet thus shows “*A wireless telephone that may be customized by searching for and selecting an audio file from a remote computer and programming the selected audio file into the telephone for use as an indicia of an incoming communication*” as required by claims 22, 30, and 39.

Limitation [22a]: “a communications link capable of connecting to a database in the remote computer that includes a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof;”

Limitation [30a/39a]: “a communications link capable of connecting to a database in the remote computer that includes a plurality of polyphonic audio files;”

273. Rizet teaches that the telephone can be used to form a “communication link” to a remote “database” that “filled with alternative forms of ringing information such as melodies, songs”: “In an embodiment the telecommunication device according to the invention is characterised in that the ringing information memory updating means is connected to the data base via a long distance communication link. Such a database can comprise one or more remotely situated databases, which are connectable directly to the telecommunication device and to the ringing information memory, but preferably there is a database which can be consulted ...by means of a generally long distance

communication link to each subscriber of the telecommunication device, in order to select and at wish download his favourite ringing item.” *Id.* at 0004 (2:19-26).

274. The “telecommunication link 2” is also discussed in connection with Fig. 2: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. Block 9 represents the establishing of a telephone call through a number to make a connection via the telecommunication link 2 to the database 6, usually through a modem (not shown). A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7.” *Id.* at 0005-0006 (3: 31-4: 17).

275. The communication link is also depicted in Fig. 1 (see reference numeral 2):

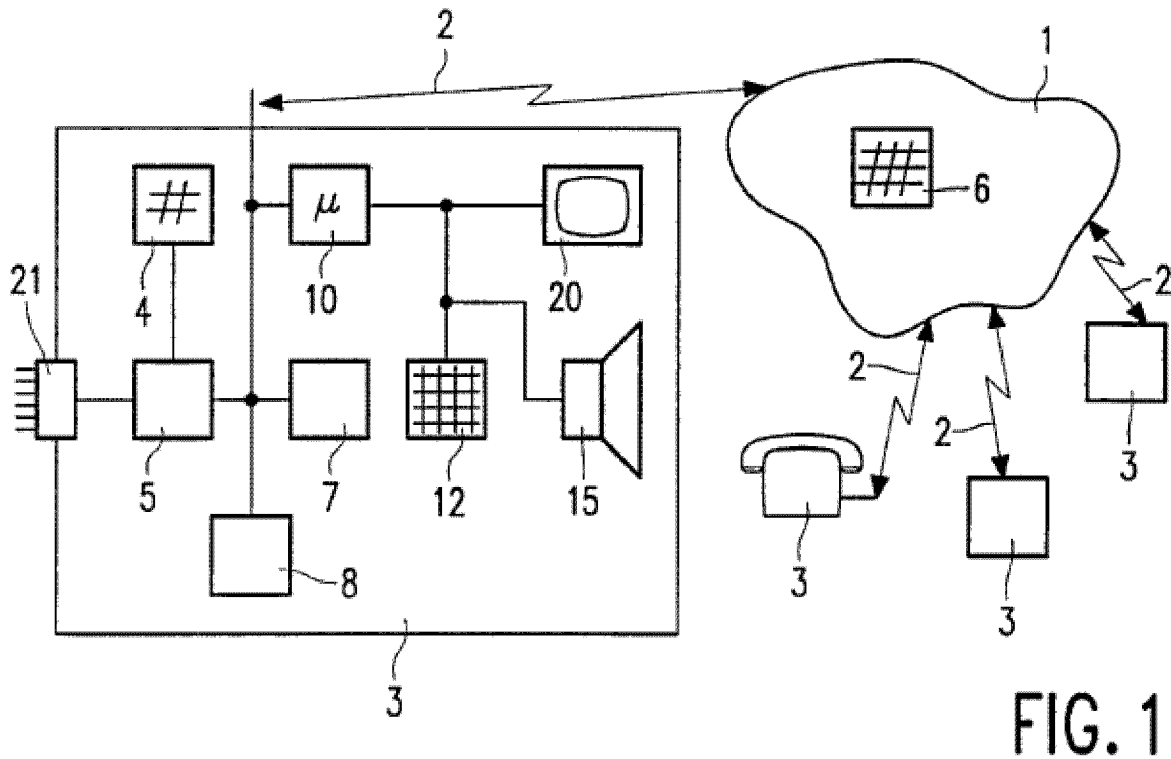


FIG. 1

276. Rizet further discloses that the databases contain ringing information: “[t]he database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24).

277. One of skill in the art would understand that “songs” and “soundtracks” meet Solocron’s Litigation construction proposed for polyphonic. In addition, one of skill in the art would find it obvious to use audio files with true polyphonic content in order to accurately reproduce “songs” and “soundtracks” that have more than one note at the same time.

278. Thus, Rizet discloses “polyphonic audio files” consistent with Solocron’s Litigation construction, and in any event it would be obvious to use true

polyphonic content with the database of Rizet, for example because Rizet discloses that its ringtones include “melody, song, [or] music.” *Id.* at 2:6.

279. Rizet provides a menu system that gives the user the ability to step through songs in the database one at a time, giving the user an option to “listen” (step 14) or to move to the next song (step 16). One of skill in the art would consider this to be a list of polyphonic audio files in the database within the meaning of claims 1 and 14.

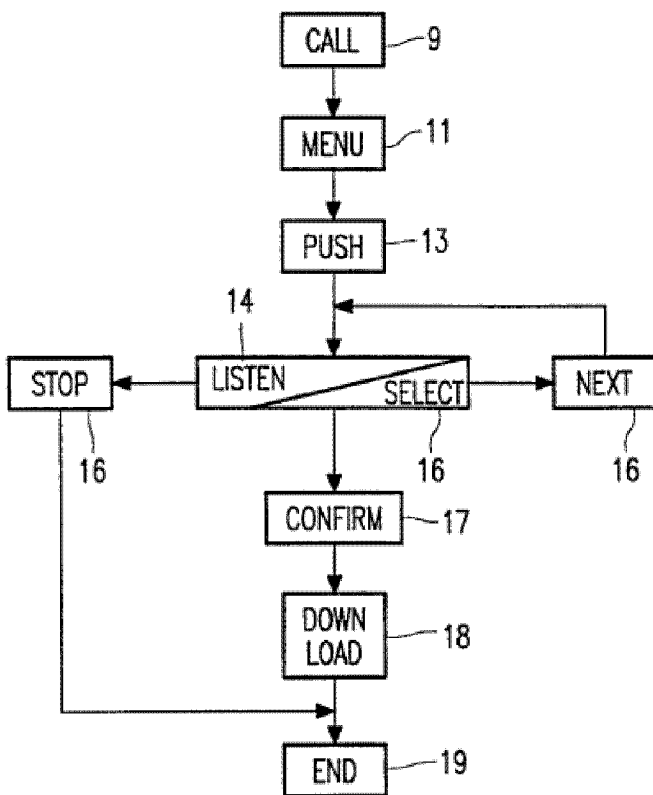


FIG. 2

280. Moreover, Rizet teaches that the database is filled with alternative forms such as songs, soundtracks, speech etc: “The database is filled with alternative forms of ringing information such as melodies, songs, sound,

soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24). One of skill in the art would understand that Rizet teaches going through each of these alternative forms in the same fashion described above, and that therefore Rizet teaches a database that contains a plurality of lists, in connection with songs, soundtracks, speech, etc.

281. Rizet thus shows “*a communications link capable of connecting to a database in the remote computer that includes a plurality of lists of audio files in MPEG, or WAV, or MP3 format or a combination thereof*” as required by claim 22, **except that** Rizet does not expressly disclose the recited file formats.

282. Rizet also shows “*a communications link capable of connecting to a database in the remote computer that includes a plurality of polyphonic audio files*” as required by claims 30 and 39.

Limitation [22b]: “a display screen and a mobile Internet browser that allows a user of the wireless telephone to browse at least one of the lists of lists of audio files and view selectable audio files present in the browsed list;”

Limitation [30b/39b]: “a display screen and a browsing application program that allows a user of the wireless telephone to browse the polyphonic audio files and select at least one polyphonic audio file therefrom;”

283. Rizet discloses a display (e.g., “video display means” and a browsing application program (e.g., “selection means” and/or a programmed processor that provides a “guided menu”) that allows the user to browse audio files (e.g., browsing “melodies” and “songs” using menu buttons such as “stop, next and

selection”) in the remote database that includes audio files, including allowing the user to “prelisten” to ringtones.

284. For example, Rizet discloses: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session. In an alternative embodiment the telecommunication device 3 contains a video display means 20 for selecting ringing information items in the database 6 on the basis of the name displayed on the video display means 20 or a reference to a particular ringing item, generally by displaying characters on the means 20.” *Id.* at 0005-0006 (3: 31-4: 17).

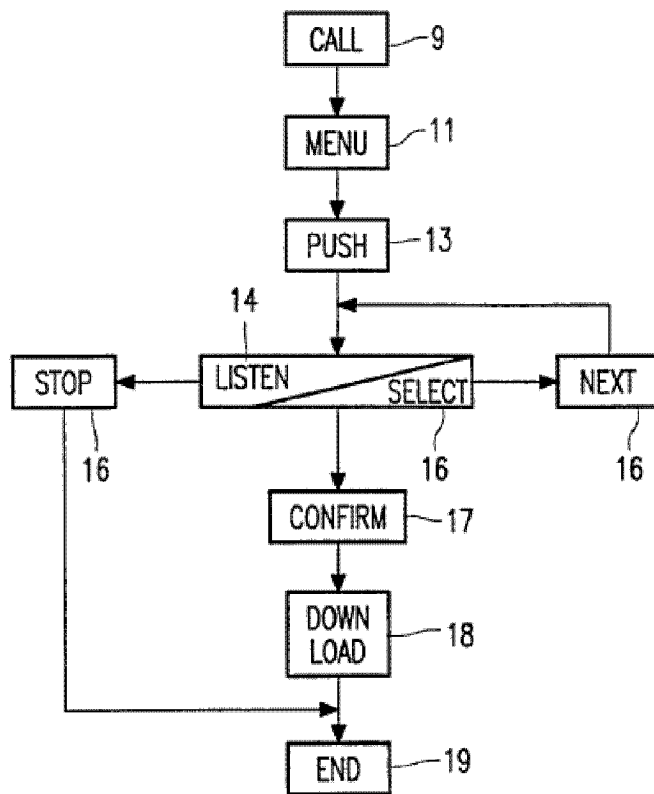


FIG. 2

285. See also Figure 1 (depicted above) which illustrates components of the menu system as discussed in the preceding paragraph.

286. Rizet further discusses a display: “[i]n a further elaboration the telecommunication device according to the invention is characterised in that it comprises video display means. The advantage thereof is that the user can select his preferred ringing information items, such as melodies, songs etcetera by name. This reduces the trespassing on communication time over the communication link.” *Id.* at 0004-0005 (2:31-3:1).

287. Rizet discloses that a menu-driven application is used to select ringing information: “[i]n a further embodiment the telecommunication device according to the invention is characterised in that there is provided in selection means, in particular user friendly menu driven, preferably easily software implemented, selection means coupled to the database for selecting user defined forms of ringing information.” *Id.* at 0004 (2:27-30).

288. As discussed above, one of skill in the art would consider using a display and a “suitably programmed and connected microprocessor 10” on a “cellular phone” to step through songs (or other alternative forms of ringing information in the database) constitutes using a mobile browser to browse a list of audio files.

289. By at least as early as late 1999, the Internet was ubiquitous, with more and more businesses turning to the Internet to expand their business. Though Rizet does not use the word “Internet,” one of skill in the art by 1999 would understand that Rizet’s repeated use of “publicly available databases” accessible by “network” is a reference to the Internet, and that Rizet therefore teaches retrieving the user-defined audio file from the Internet. Thus, it is my opinion that Rizet discloses accessing the public database using the Internet, which would make the browsing application an “mobile Internet browser”.

290. Alternatively, Rizet renders use of an internet browser obvious. The repeated use of “publicly available databases” that are “accessible by network” would have led one of skill in the art to utilize the Internet to access the database. As indicated above, by at least as early as late 1999, the Internet was ubiquitous, with more and more businesses turning to the Internet to expand their business. Based upon the teaching of Rizet to make the databases publicly accessible, it would have been obvious to make the database of Rizet available on the Internet, and the user would have therefore used a mobile Internet browser to access the database and browse a list of ringtones for selection.

291. Rizet discloses, as well as renders obvious, *“a display screen and a mobile Internet browser that allows a user of the wireless telephone to browse at least one of the lists of lists of audio files and view selectable audio files present in the browsed list”* as recited in claim 22.

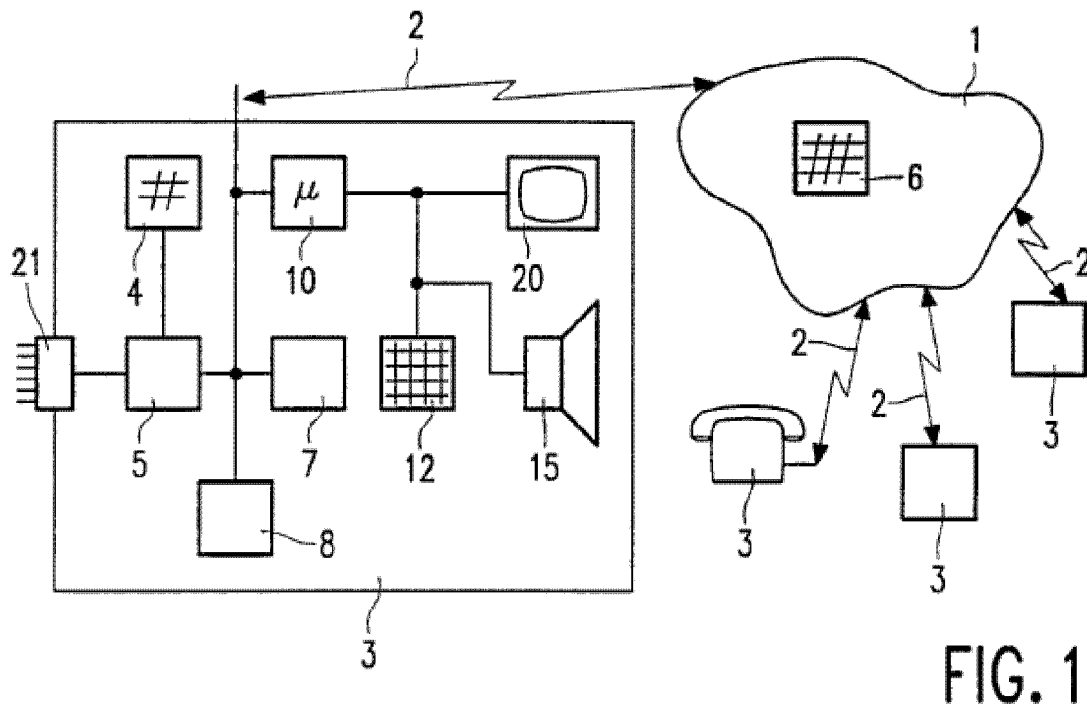
292. Rizet thus also shows *“a display screen and a browsing application program that allows a user of the telephone to browse the polyphonic audio files and select at least one polyphonic audio file therefrom”* as specified in claims 30 and 39.

Limitation [22c]: “processing circuitry configured to receive a selected one of the audio files from the communications link;”

Limitation [30c/39c]: “processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link;”

293. Rizet discloses a telephone having a processor (e.g., “microprocessor 10” and associated hardware that supervises receipt of and receives a selected audio file received from the communications link, including for example a “cellular” link. In a cellphone that receive wireless transmission, the processor necessarily supervises, receives and processes the received signals in order to retrieve data from the wireless transmissions. Moreover, Rizet teaches that as soon as the ringing tone is downloaded the session is terminated, which also confirms that the processor is supervising receipt of the audio file: “Each telephone 3 is provided with a ringing information memory 4, wherein information or data is stored about the sound a telephone makes when it rings. Each telephone 3 is also provided with ringing information memory updating means 5, which means 5 are connected to the memory 4, in order to be able to update the content of the memory 4. The memory updating means 5 is connected via the communication link 2 to a database 6, which is present somewhere in the network 1. The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera. The communication link 2 is connected to means 7 for downloading at least one or the alternative forms of ringing information to the ringing information memory 4. There is provided in selection means 8 connected to the memory updating means 5 and via the communication link 2 to the database 6 in order to be capable of selectively providing ringing information items from the

database 6 to the memory 4 in a way to be described with reference to the flowchart of figure 2.” *Id.* at 0005 (3:18-30).



294. The process for receiving and processing ringing information is disclosed by Rizet: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. ... Block 9 represents the establishing of a telephone call through a number to make a connection via the telecommunication link 2 to the database 6, usually through a modem (not shown). A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a

keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session.” *Id.* at 0005-0006 (3:31- 4:17).

295. Rizet also discusses receiving high-quality ringing information: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone.... [T]he ringing information updating means comprises a public database containing a variety of alternative forms of ringing information. ...So the personal touch and the diversity of adjustments on this point to the wishes of each individual owning a telecommunication device can be honoured in a recognisable, individualised way, without expanding hardware or hardware requirements beyond the technical means normally available to an average user. This high quality, multi diverse extension can be implemented very simple on for example a personal, mobile, cellular, or cordless telephone....” *Id.* at 0003-0004 (1:27-2:18). *See also* Fig. 2 (depicted above in connection with limitation [1b]).

296. One of skill in the art would consider the “means 7 for downloading ... ringing information” as discussed above – which is coupled to the microprocessor (“suitably programmed and connected microprocessor 10”), constitutes processing circuitry configured to supervise receipt of the audio file being downloaded and ends the “cession” after download (see discussion of Block 19). Figure 1 shows the components being connected to each other and the microprocessor, which constitutes the processing circuitry.

297. It is also my opinion that this the supervising receipt function is performed inherently by the processing circuitry in the cellular phone described in Rizet because it necessarily has to use a processor to receive RF signals and convert them to useable information, and necessarily monitors receipt of data to know when a transmission has been fully received so that it can update the ringing tone memory with the newly downloaded ringtone.

298. Rizet thus shows “*processing circuitry configured to receive a selected one of the audio files from the communications link*” as recited in claim 22, as well as “*processing circuitry configured to supervise receipt of a selected polyphonic audio file from the communications link*” as required by claims 30 and 39.

Limitation [22d]: “a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication;”

Limitation [30d/39d]: “a programmable memory circuit for allowing the user to optionally store the selected polyphonic audio file for use as an indicia of an incoming communication”;”

299. Rizet discloses a telephone having a programmable memory that can store ringtones: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session. In an alternative embodiment the telecommunication device 3 contains a video display means 20 for selecting ringing information items in the database 6 on the basis of the name displayed on the video display means 20 or a reference to a particular ringing item, generally by displaying characters on the means 20.” *Id.* at 0005-0006 (3:18-30).

300. The high quality ringing information is stored in the memory: “Each telephone 3 is provided with a ringing information memory 4, wherein information or data is stored about the sound a telephone makes when it rings. Each telephone 3 is also provided with ringing information memory updating means 5, which means 5 are connected to the memory 4, in order to be able to update the content of the memory 4. The memory updating means 5 is connected via the communication link 2 to a database 6, which is present somewhere in the network 1. ...There is provided in selection means 8 connected to the memory updating means 5 and via the communication link 2 to the database 6 in order to be capable of selectively providing ringing information items from the database 6 to the memory 4 in a way to be described with reference to the flowchart of figure 2.” *Id.* at 0005 (3:18-30).

301. Rizet discloses that ringing information may be stored in a database: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone...[T]he content of the ringing memory means in the form of ringing information is updatable from the publicly available database, at wish on a regular basis. So the personal touch and the diversity of adjustments on this point to the wishes of each individual owning a telecommunication device can be honoured in a recognisable, individualised way...” *Id.* at 0003-0004 (1:27-2:18).

302. Rizet thus shows “a programmable memory circuit for allowing the user to optionally store the selected [polyphonic] audio file for use as an indicia of an incoming communication” as required by claims 22, 30, and 39.

Limitation [22e]: “an enhanced performance speaker capable of providing a substantially full range of audio sounds when one of the selected audio files is played as an indicia of an incoming communication.”

Limitation [30e/39e]: “an enhanced performance speaker capable of providing a substantially full range of audio sounds from the selected polyphonic audio file when the selected polyphonic audio file is played.”

303. Rizet discloses a speaker (“audio producing means 15” depicted in Fig. 1) that works in conjunction with the processor to replay the “high quality” “songs” and “melodies”: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone [by providing] a public database containing a variety of alternative forms of ringing information ...such as a melody, song, music.... *Id.* at 0003-0004 (1:27-2:18). The audio producing means is also recited in the claims. *See, e.g., id.* at 0007 (5:21-23) (claim 8) (“telecommunications device comprises audio producing means”).

304. Songs and soundtracks would contain a full range of audio sounds: “The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24).

305. “A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded.” *Id.* at 0006 (4:2-8).

306. As discussed above, the audio producing means produces a high quality audible ringtone. Rizet would appear to have at least as much disclosure for an enhanced speaker as does the ‘395 patent.

307. One of skill in the art would consider the audio producing means that produces a high quality ringtone in Rizet be an enhanced speaker within the meaning of claims 22, 30, and 39.

308. Rizet thus shows “*an enhanced performance speaker capable of providing a substantially full range of audio sounds*” both “*when one of the selected audio files is played as an indicia of an incoming communication*” as required by claim 22 and “*from the selected polyphonic audio file when the selected polyphonic audio file is played*” as required by claims 30 and 39.

309. Thus, it is my opinion that Rizet discloses each and every element of claims 22, 30, and 39, **except for** possibly the file formats recited in Limitation

[22a]. Thus, with respect to claims 30 and 39, I conclude that Rizet is either anticipatory or renders those claims obvious by itself.

310. Both Rolf and Fritsch disclose databases accessible via an Internet website in which MP3 audio files are downloaded via a wireless link to mobile phones. Thus, both Rolf and Fritsch supply the disclosure that is otherwise missing from Rizet (i.e. Limitation [22a]).

311. In particular, Rolf discloses “a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant. In particular, a user of the cellular telephone (for example) may use the telephone to establish a wireless communications link with the remote, central facility, and then wirelessly download one or more selected music recordings for storage in a memory of the cellular telephone. Preferably, the music recordings are encoded and transmitted in packets, and may be encoded by a compression algorithm into an encoded (such as MP3 or other) format.” Exhibit 1100 at 0003. *See also id.* at 0010 (“The remote storage facility may, for example, be at an address on the world wide web, and includes a data base having a plurality of music recordings therein. ... [T]he music recordings are preferably encoded in an encoded format, such as MP3”); and *id.* at 0008 (3:17-21: “In preferred embodiments of the present invention, the wireless communications link established between the wireless communications

device and the central facility is a cellular communications link and, more particularly, is an Internet link.”).

312. Likewise, Fritsch discloses “a system and method for maintaining a music web site on the Internet. Consumers may access the web site via a personal computer or any other wired or wireless Internet access device, such as WebTV, personal digital assistant, cellular telephone, etc., to obtain a variety of services and products. For instance, a consumer may browse through artists, tracks or albums, pre-listen to a portion of the song and purchase the selected song either by downloading the digital data to her computer hard drive or by placing a mail order for a compact disk (CD). A specially encoded or encrypted MP3 files called ‘NETrax’ are delivered from a server over the Internet” Exhibit 1101 at 2:64-3:9. *See also id.* at 9:18-21 and 8:65-9:3.

313. Moreover, to the extent that an explicit mention is needed to use polyphonic audio files as ringtones, Rolf supplies the same with its disclosure of a “remote, central facility” from which “the selected music recording(s) is/are transmitted via a wireless data communications link to the cellular telephone” and its disclosure that the recordings are encoded, for example, in MP3 format. Because the inventor argued that MP3 files are “polyphonic audio files,” Rolf’s disclosure of MP3 files (or Fritsch’s disclosure of the same format, for that matter) is likewise sufficient to teach “polyphonic audio files.”

314. A person of ordinary skill in the art would be motivated combine Rizet with either Rolf or Fritsch. Rizet teaches an improvement relating to delivering “high quality” ringing tones in the form of “melody, song, music” and soundtracks to mobile phones. Rolf and Fritsch both teach the generalized delivery of music to cellular phones in various formats, including specifically MP3 format. Rizet and Rolf both use menu-driven systems to select their music. Rizet does not specify any particular file format for its ringing tones or limit the file formats for its ringing tones in any way. Thus, one of ordinary skill in the art would have substituted the MP3 music databases disclosed in Rolf and Fritsch for Rizet’s more generalized “database...filled with alternative forms of ringing information”.

315. Because the combination of Rizet with Rolf or Fritsch discloses each and every element of claims 22, 30, and 39, those claims are rendered obvious by the combination of Rizet with Rolf or Fritsch.

b. **Claim 25**

Limitation [25]: “The wireless telephone of claim 22 configured to allow the user to search the database for a certain desired audio file using title or description information to aid in locating a desired audio file.”

316. Claim 25 is dependent on claim 22, and as discussed above, the combination of Rizet and either Rolf or Fritsch discloses each and every element of claim 22. Each of Rizet, Rolf, and Fritsch discloses Limitation [25].

317. Rizet, for example, teaches a “video display means” which advantageously allows the user to “select his preferred ringing information items, such as melodies, songs etcetera by name.” Exhibit 1014 at 2:31-3:1. *See also id.* at 4:11-15 (“[T]he telecommunications device 3 contains a video display means 20 for selecting ringing information items in the database 6 on the basis of the name displayed on the video display means 20....”).

318. Rolf teaches that “[T]he music recordings are categorized by a plurality of selectable fields, such as ‘title’, ‘artist’, ‘album or CD type’, ‘recording label’, etc.” Exhibit 1100 at 0010. Rolf also explains that “the wireless communications device 12 can be utilized to select recording via a menu or listing of recordings.” *Id.* at 0017. Of course, a person of ordinary skill in the art would recognize that title and description are among the most common ways to catalog audio files, such as those in Rolf’s “menu or listing of recordings.”

319. Fritsch discloses “fields for entering music-related search queries. ... [T]he PC user may look for a song by title or album name.” Exhibit 1101 at 3:50-59.

320. The combination of Rizet with Rolf or Fritsch thus shows “*the wireless telephone of claim 22 configured to allow the user to search the database for a certain desired audio file using title or description information to aid in locating a desired audio file*” as required by claim 25.

321. Thus, it is my opinion that the combination of Rizet with Rolf or Fritsch discloses each and every element of claim 25, and therefore renders that claim obvious.

c. **Claim 40**

Limitation [40]: “The wireless telephone of claim 39 wherein the polyphonic audio file is selected from the group comprising MP3, MPEG, or WAV files.”

322. Claim 40 is dependent on Claim 39. As discussed above, Rizet alone either anticipates claim 39 or renders it obvious. In addition, the combination of Rizet and either Rolf or Fritsch renders claim 39 obvious.

323. Claim 40 is also very similar to Limitation [22a], reciting identical file formats. As discussed above, both Rolf and Fritsch disclose Limitation [22a] and are readily and logically combinable with Rizet.

324. The combination of Rizet with Rolf or Fritsch thus shows “*the wireless telephone of claim 39 wherein the polyphonic audio file is selected from the group comprising MP3, MPEG, or WAV files*” as required by claim 40.

325. Thus, it is my opinion that the combination of Rizet with either Rolf or Fritsch renders claim 40 obvious.

I. Rizet (Exhibit 1014) in combination with Perez (Exhibit 1081) and either Rolf (Exhibits 1099 and 1100) or Fritsch (Exhibit 1101)

326. In the preceding section, I set forth the basis for my conclusion that the combination of Rizet with either Rolf or Fritsch renders claims 22, 25, 30, 39,

and 40 obvious. Below, I explain how the addition of Perez supplies additional teachings relevant to the “enhanced speaker” limitation, particularly if Solocron’s Litigation construction for that term is considered controlling.

327. I discuss the teachings of Perez in Section V.C.1 above. As I explain, Perez recognizes a need “in the electronic industry to replace analog driven speakers and various products, including cellular phones, with purely digitally driven speakers which are less susceptible to EMI.” Exhibit 1081 at 2:40-43. In fact, Perez expressly contemplates that “cellular phones are an ideal application” for its transducers. Exhibit 1081 at 6:8-11.

328. These teachings establish that those of skill in the art at the time of Mr. Shanahan’s application had already recognized that it would be desirable to incorporate an “enhanced performance speaker” into cellular telephones. Thus, motivation exists to incorporate Perez’s transducer into the cellular phone disclosed in the combination of Rizet and either Rolf or Fritsch.

329. For the foregoing reasons, I conclude that the combination of Rizet, Perez, and either Rolf or Fritsch renders claims 22, 25, 30, 39, and 40 obvious.

J. Rizet (Exhibit 1014) in combination with Nikkei (Exhibit 1074)

330. In Section V.H above, I set forth a comparison of Rizet to claims 22, 25, 30, 39, and 40 of the ‘395 patent.

331. To reiterate, I concluded that Rizet either teaches each and every element recited in claims 30 and 39 or that it teaches each and every element **except for** possibly “polyphonic audio files,” which I concluded is at most an obvious variation on the teachings of Rizet.

332. I also concluded that Rizet teaches each and every element recited in claims 22 and 25 **except for** possibly the recited file formats. I noted the same possibly missing disclosure relative to claim 40.

333. I have also discussed above the teachings of Nikkei relative to the state of the art in 1999, including the express use of the term “polyphonic” to describe ringtones (unlike the specification of the ’395 patent) and the technology, including speakers, associated with the same.

334. Relevant to Limitations [22a] and [40], Nikkei also discloses audio files in MP3 format. *See, e.g.*, Exhibit 1074 at 0002-07 (“These are functions to playback music data in formats such as MP3”); *id.* at Figures 2, 1, and 5. In fact, Nikkei describes a “Samsung ... mobile phone with an MP3 playback function at a ‘Telecom 99 ... in October 1999’”. *Id.* at 0007.

335. Although Rizet does not expressly discuss polyphonic audio files or say that polyphonic audio files are played using the audio producing means, Nikkei establishes indisputably that polyphonic ringtones already existed and were the future of ringtones. Nikkei provides a clear teaching that the industry and

consumer demand were growing for polyphonic ringtones. It is commonsensical to give customers what they want. One of skill in the art would therefore have considered it obvious to utilize polyphonic content (as suggested by Nikkei) for audio information used as ringtone (as disclosed in Rizet), which could then be reproduced on a speaker to yield “high quality” audio (as described in Rizet).

336. Moreover, Rizet describes upgrades in hardware (including the use of codecs, speakers, and amplifiers), which can be used to reproduce polyphonic ringtones on a speaker to yield high quality sound. The trends discussed in Nikkei are not specific to any one phone technology, but instead are generally expressed with respect to the cell phone industry as a whole, and one of skill in the art would readily have incorporated the teachings of Nikkei as a simple matter of technology adoption driven by market forces.

337. Nikkei also publishes a list of 20 popular ringtones (“[b]ased upon , sales data for September 1999 in ‘Ringtone Tone Collection’, which is a vending machine of ringing tones by CAPCON”). Many of the top 20 popular songs appear to be polyphonic because they reference not only the song, but also the vocalist, including for example, “Livin’ la vida loca [by] Ricky Martin” and “My heart will go on [by] Celine Dion”:

Table 1: Download rank of ringing tones
 Based upon sales data for September 1999 in "Ringing Tone Collection", which is a vending machine of ringing tones by CAPCON (Table: Capcon)

Rank	Title	Artist
1	energy flow (Back STREET)	
2	BE TOGETHER	
3	Living' La Vida Loca	Ricky Martin
4	Tsunami	Ayumi Hamasaki
5	Sunny Day Sunday	SENTIMENTAL BUS
6	Why ...	Hydruic Blue
7	Driver's High	L'Arc ~ en ~ Ciel
8	That paper plane dividing cloudy sky	13
9	Pieces	L'Arc ~ en ~ Ciel
10	Theme of STAR WARS	
11	Theme of Nizaburo Furuhata	
12	Fast Love	Hikaru Utada
13	AS TIME GOES BY	Two
14	Fly	SMAP
15	Flower	KOJI YOSHI
16	Girigiri chop	B'z
17	Ecupic 3-min cooking	
18	My Heart Will Go On	Celine Dion
19	G-men 75	
20	Sentimental	Yuzu

338. Given that lists are commonly used to present popular music, it is obvious to utilize a plurality of lists to present potential songs and/or ringtones for selection. One of skill in the art would be motivated to add similar lists, for example top 10 lists to identify the most popular hits in each genre, for the simple reason that this is an easy and common way in which people seek out their favorite songs, and thus, it is my opinion that one of skill in the art would be motivated to add a list feature to allow a user to select from a plurality of lists, whether similar to the top 20 list in Nikkei, or be it a list of popular ringtones for a different genres of music. It would be a much more expedient way to present information to help a user find a ringing tone.

339. In addition to the reasons above, one of skill in the art would have readily combined Rizet and Nikkei because they are both directed to delivering improved sounding ringtones to mobile phones.

340. As such, it is my opinion that the combination of Rizet and Nikkei renders claims 22, 25, 30, 39, and 40 obvious, regardless of which construction is adopted for “polyphonic audio files.”

K. Rizet (Exhibit 1014).

341. As an initial matter, I note there is substantial similarity between claims 1 and 14 of the ‘395 patent. For simplicity’s sake, therefore, I will treat claims 1 and 14 together in my analysis below, highlighting the differences where appropriate.

342. As discussed elsewhere in this Declaration, Rizet describes its “object” is to provide “high quality” ringing tones in the forms of “melody, song, music,” and “soundtracks.” As explained in more detail below, the systems and methods described in Rizet anticipate and would have made obvious to a person of ordinary skill in the art claims 1, 8 and 14 of the ‘395 patent.

1. Overview of Rizet

343. As discussed above, Rizet is a published PCT application which Philips Electronics N.V. (“Philips”) filed November 13, 1997—more than two years before the earliest priority application for the ‘395 patent was filed. Rizet

was not cited during prosecution of the '395 patent. Notably, Rizet uses strikingly similar language to the '395 patent, including for example, “user-defined” ringing tones (as referenced in the title and specification of the '395 patent), “communication link”, “remotely situation database” (compared to “database in remote computer”).

2. Comparison of UM to Claims 1, 8, and 14 of the '395 Patent

a. Claims 1 and 14

Claims 1/14 Preamble: “A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:”

344. Rizet discloses a telephone (e.g., a “cellular telephone”) that can be programmed with “user-defined forms of ringing information” (Exhibit 1014 at 0004) (e.g., “melody, song, music,” and “soundtracks”) : “A telecommunication device is disclosed comprising a ringing information memory means, and a ringing information memory updating means for updating the ringing information content [in] the form of ... melodies.” Exhibit 1014 at 0001 (Abstract).

345. Rizet’s claims are even directed to a cellular telephone: “the telecommunication device is ... a cellular telephone.” *Id.* at 0007 (claim 9).

346. Rizet disclose that ringing information of high quality, including songs and music: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a

telephone [by providing] a public database containing a variety of alternative forms of ringing information ...such as a melody, song, music...” *Id.* at 0003-0004 (1:27-2:6).

347. Rizet discloses that such ringing information is stored in a database: “The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24). See also Rizet claim 4 (wherein “the ringing information memory updating means is connected to selection means coupled to the database for selecting user defined forms of ringing information”). *Id.* at 0007.

348. One of skill in the art would consider the ringing information stored in the database constitutes audio files because the ringing information comprises audio information or data (see, e.g., claim 6 (“ringing information comprises audio ... information) that is used by the phone’s “audio producing means” (see, e.g., claim 8 (“device comprises audio producing means”)) to produce an audible “high quality” (*id.* at 0003 (1:26)) ringing tone. Moreover, for the reasons discussed above in ¶ 269, one of skill in the art would understand that Rizet discloses the use of digital audio files.

349. Rizet thus shows “*A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for use as an indicia of an incoming communication*” as required by claims 1 and 14.

Limitation [1a/14a]: “a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files”

350. Rizet teaches that the telephone can be used to form a “communication link” to a remote “database” that “filled with alternative forms of ringing information such as melodies, songs” and expressly states that the databases are “connectable directly to the telecommunication device”: “In an embodiment the telecommunication device according to the invention is characterised in that the ringing information memory updating means is connected to the data base via a long distance communication link. Such a database can comprise one or more remotely situated databases, which are connectable directly to the telecommunication device and to the ringing information memory, but preferably there is a database which can be consulted ...by means of a generally long distance communication link to each subscriber of the telecommunication device, in order to select and at wish download his favourite ringing item.” *Id.* at 0004 (2:19-26).

351. The “telecommunication link 2” is also discussed in connection with Fig. 2: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. Block 9 represents the establishing of a telephone call through a number to make a connection via the telecommunication link 2 to the

database 6, usually through a modem (not shown). A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7.” *Id.* at 0005-0006 (3: 31-4: 17).

352. The communication link is also depicted in Fig. 1 (see reference numeral 2):

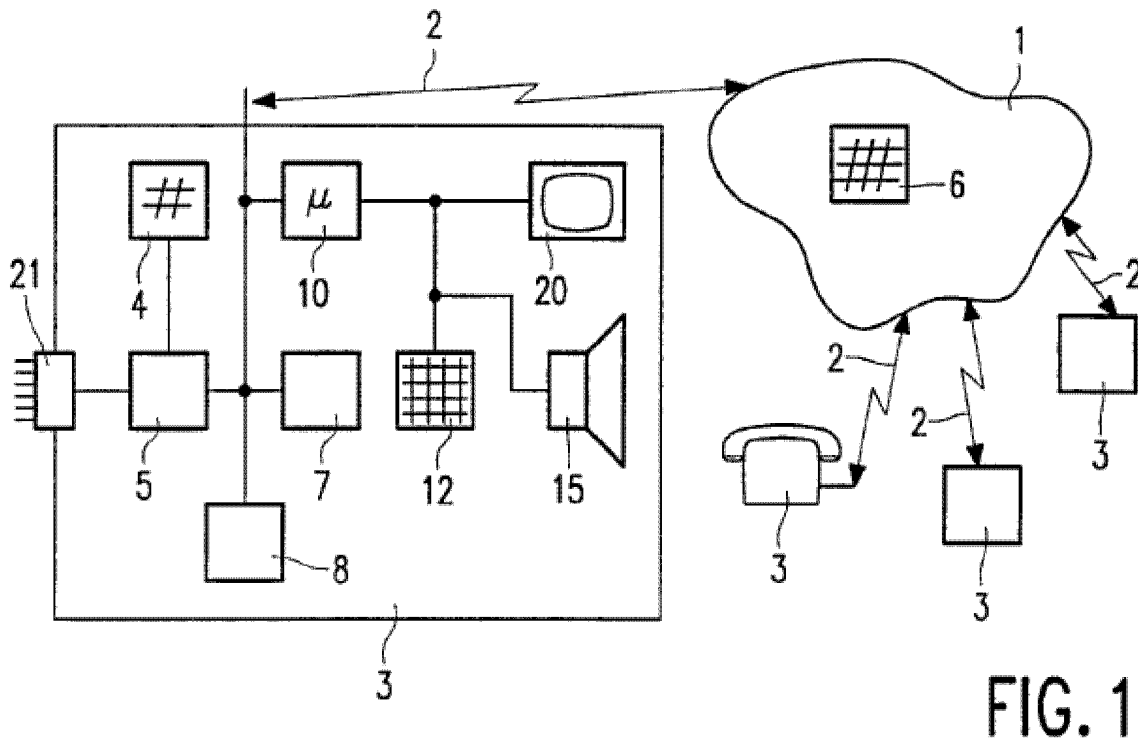


FIG. 1

353. Rizet provides a menu system that gives the user the ability to step through songs in the database one at a time, giving the user an option to “listen” (step 14) or to move to the next song (step 16). One of skill in the art would

consider this to be a list of polyphonic audio files in the database within the meaning of claims 1 and 14.

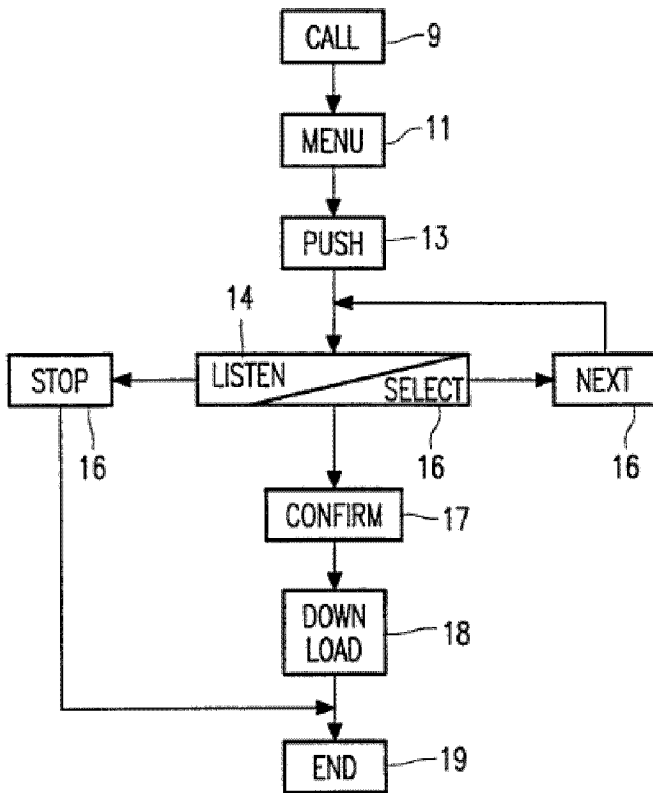


FIG. 2

354. Moreover, Riset teaches that the database is filled with alternative forms such as songs, soundtracks, speech etc: “The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera.” *Id.* at 0005 (3:23-24). One of skill in the art would understand that Riset teaches going through each of these alternative forms in the same list like fashion described above, and that therefore Riset teaches a plurality of lists.

355. Alternatively, it would be obvious to one skilled in the art to utilize different lists of ringtones as a quick and easy way to present options to a consumer. As with any library, creating an index or inventory of the books and music would be a first step to getting organized so that you can help a customer find information. One of skill in the art would appreciate that as the number of ring tones grows, a user needs an easy way to find the song they want to hear. Top ten lists, for example, are common in all aspects of society, and have long been a part of the music industry. It would be common sense to use multiple lists to present the current popular ringtones by different genres to a person looking to upgrade their phone. For example, each genre of music has its own lists of top lists (e.g., “Top Forty” list for country, pop, rock, jazz, etc.).

356. Given that lists are commonly used to present popular music, it is obvious to utilize a plurality of lists to present potential songs and/or ringtones for selection. One of skill in the art would be motivated to add a plurality of lists, for example, various top 10 lists, to help organize information based on customer preferences. Such lists are an easy and common way in which people seek out their favorite songs, and thus, it is my opinion that one of skill in the art would look to add a commonplace feature such as a list to help customers find their favorite songs. .

357. Rizet thus discloses and/or renders obvious “*a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files*” as required by claims 1 and 14.

Limitation [1b/14b]: “a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;”

358. Rizet discloses a display (e.g., “video display means” and a browsing application program (e.g., “selection means” and/or a programmed processor that provides a “guided menu”) that allows the user to browse a list of audio files (e.g., browsing “melodies” and “songs” using menu buttons such as “stop, next and selection”) in the remote database that includes audio files, including allowing the user to “prelisten” to ringtones.

359. For example, Rizet discloses: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera,

before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session. In an alternative embodiment the telecommunication device 3 contains a video display means 20 for selecting ringing information items in the database 6 on the basis of the name displayed on the video display means 20 or a reference to a particular ringing item, generally by displaying characters on the means 20.” *Id.* at 0005-0006 (3: 31-4: 17).

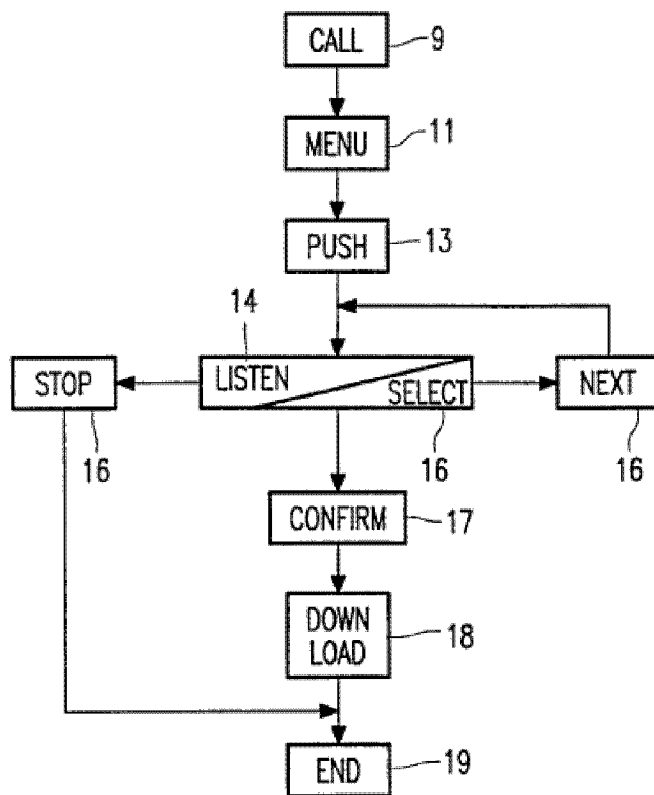


FIG. 2

360. See also Figure 1 (depicted above) which illustrates components of the menu system as discussed in the preceding paragraph.

361. Rizet further discusses a display: “[i]n a further elaboration the telecommunication device according to the invention is characterised in that it comprises video display means. The advantage thereof is that the user can select his preferred ringing information items, such as melodies, songs etcetera by name. This reduces the trespassing on communication time over the communication link.” *Id.* at 0004-0005 (2:31-3:1).

362. Rizet discloses that a menu-driven application is used to select ringing information: “[i]n a further embodiment the telecommunication device according to the invention is characterised in that there is provided in selection means, in particular user friendly menu driven, preferably easily software implemented, selection means coupled to the database for selecting user defined forms of ringing information.” *Id.* at 0004 (2:27-30).

363. Rizet also discloses that the device can be a cellular phone, see, e.g., Rizet at 0007 (claim 9 (“the telecommunication device is ... a cellular telephone”), and therefore one of skill in the art would consider the menu-driven program (e.g., *id.* at 0006 (4:3) (“suitably programmed and connected microprocessor 10 in telecommunication device”)) to be a mobile browsing application.

364. Rizet thus shows “a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;” as required by claims 1 and 14.

Limitation [1c]: “a speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone; and”

Limitation [14c]: “processing circuitry configured to receive a selected digital audio file from the communications link; and”

365. Rizet discloses a telephone having a processor (e.g., “microprocessor 10” and associated hardware that supervises receipt of and receives a selected audio file received from the communications link, including for example a “cellular” link. In a cellphone that receive wireless transmission, the processor necessarily supervises, receives and processes the received signals in order to retrieve data from the wireless transmissions.

366. Moreover, Rizet teaches that as soon as the ringing tone is downloaded the session is terminated, which also confirms that the processor is supervising receipt of the audio file: “Each telephone 3 is provided with a ringing information memory 4, wherein information or data is stored about the sound a telephone makes when it rings. Each telephone 3 is also provided with ringing information memory updating means 5, which means 5 are connected to the

memory 4, in order to be able to update the content of the memory 4. The memory updating means 5 is connected via the communication link 2 to a database 6, which is present somewhere in the network 1. The database is filled with alternative forms of ringing information such as melodies, songs, sound, soundtracks, speech etcetera. The communication link 2 is connected to means 7 for downloading at least one or the alternative forms of ringing information to the ringing information memory 4. There is provided in selection means 8 connected to the memory updating means 5 and via the communication link 2 to the database 6 in order to be capable of selectively providing ringing information items from the database 6 to the memory 4 in a way to be described with reference to the flowchart of figure 2.”

Id. at 0005 (3:18-30).

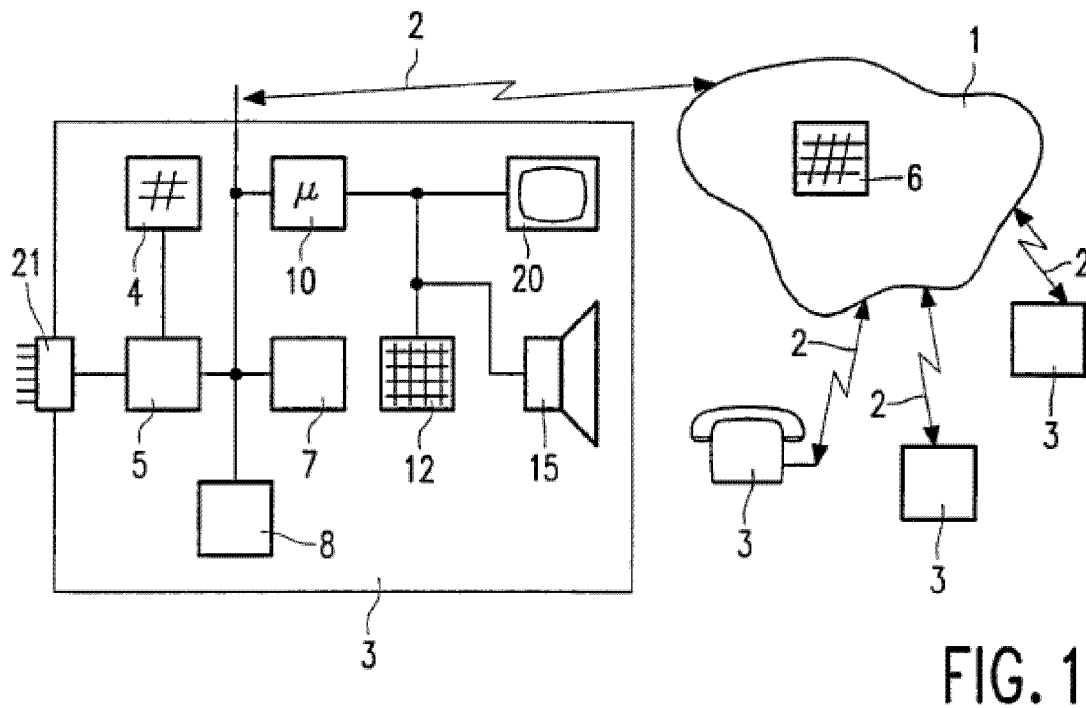


FIG. 1

367. The process for receiving and processing ringing information is disclosed by Rizet: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing information memory 4. ... Block 9 represents the establishing of a telephone call through a number to make a connection via the telecommunication link 2 to the database 6, usually through a modem (not shown). A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In

block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session.” *Id.* at 0005-0006 (3:31- 4:17).

368. Rizet also discusses receiving high-quality ringing information: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone.... [T]he ringing information updating means comprises a public database containing a variety of alternative forms of ringing information. ... So the personal touch and the diversity of adjustments on this point to the wishes of each individual owning a telecommunication device can be honoured in a recognisable, individualised way, without expanding hardware or hardware requirements beyond the technical means normally available to an average user. This high quality, multi diverse extension can be implemented very simple on for example a personal, mobile, cellular, or cordless telephone....” *Id.* at 0003-0004 (1:27-2:18). *See also* Fig. 2 (depicted above in connection with limitation [1b]).

369. One of skill in the art would consider the “means 7 for downloading ... ringing information” as discussed above – which is coupled to the

microprocessor (“suitably programmed and connected microprocessor 10”), constitutes processing circuitry configured to supervise receipt of the audio file being downloaded and ends the “cession” after download (see discussion of Block 19). Figure 1 shows the components being connected to each other and the microprocessor, which constitutes the processing circuitry.

370. It is also my opinion that this the supervising receipt function is performed inherently by the processing circuitry in the cellular phone described in Rizet because it necessarily has to use a processor to receive RF signals and convert them to useable information, and necessarily monitors receipt of data to know when a transmission has been fully received so that it can update the ringing tone memory with the newly downloaded ringtone.

371. The passages quoted above also show that Rizet has a “audio producing means 15” (depicted in Fig 1 using a symbol which one of skill in the art would recognize as a speaker) that works in connection with the “suitably programmed and connected microprocessor 10” to provide “a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The

selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session.” Id. at 0005-0006 (3:31- 4:17).

372. Rizet thus shows “*a speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone*” as required by claim 1.

373. Rizet thus shows “*processing circuitry configured to receive a selected digital audio file from the communications link*” as required by claim 14.

Limitation [1d]: “a programmable memory circuit for allowing the user to optionally store the selected digital audio file for use as an indicia of an incoming communication.”

Limitation [14d]: “a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication.”

374. Regarding these two elements, the only difference is that 1d includes “digital” before “audio file,” but since “the selected audio file” is a “digital audio file,” there is no substantive difference.

375. Rizet discloses a telephone having a programmable memory that can store ringtones: “Figure 2 shows a flowchart for elucidating one possible way of implementing the updating of the ringing information present in the ringing

information memory 4. A suitably programmed and connected microprocessor 10 in telecommunication device 3 provides a guided menu (block 11), wherein choices can be made by pushing appropriate keys on a keyboard 12, to choose (block 13) for example for ringing information in the form of music, tones, speech etcetera to be downloaded by the downloading means 7. In block 14 the chosen ringing information can at wish be prelistened by audio producing means 15 to hear the melody, speech etcetera, before being downloaded. The selection means 8 provide for a stop, next and selection in blocks 16 of a preferred and in block 17 confirmed choice of ringing information. In block 18 the means 7 download the confirmed choice and block 19 ends the session. In an alternative embodiment the telecommunication device 3 contains a video display means 20 for selecting ringing information items in the database 6 on the basis of the name displayed on the video display means 20 or a reference to a particular ringing item, generally by displaying characters on the means 20.” *Id.* at 0005-0006 (3:18-30).

376. The high quality ringing information is stored in the memory: “Each telephone 3 is provided with a ringing information memory 4, wherein information or data is stored about the sound a telephone makes when it rings. Each telephone 3 is also provided with ringing information memory updating means 5, which means 5 are connected to the memory 4, in order to be able to update the content of the memory 4. The memory updating means 5 is connected via the communication

link 2 to a database 6, which is present somewhere in the network 1. ...There is provided in selection means 8 connected to the memory updating means 5 and via the communication link 2 to the database 6 in order to be capable of selectively providing ringing information items from the database 6 to the memory 4 in a way to be described with reference to the flowchart of figure 2.” *Id.* at 0005 (3:18-30).

377. Claim 10 of Rizet describes the programming of the memory: “A method for providing ringing information to a telecommunication device having a ringing information memory and a ringing information memory updating means connected to the ringing information memory, characterised in that the ringing information is downloaded from a public database comprising a variety of alternative forms of ringing information and that the ringing information memory updating means update the ringing information memory with the downloaded ringing information.”

378. Rizet discloses that ringing information may be stored in a database: “It is an object to provide a multi selection, high quality ringing information extend/change feature to a telecommunication device such as a telephone...[T]he content of the ringing memory means in the form of ringing information is updatable from the publicly available database, at wish on a regular basis. So the personal touch and the diversity of adjustments on this point to the wishes of each

individual owning a telecommunication device can be honoured in a recognisable, individualised way....” *Id.* at 0003-0004 (1:27-2:18).

379. Rizet thus shows “*a programmable memory circuit for allowing the user to optionally store the selected digital audio file for use as an indicia of an incoming communication.*” as required by claim 1.

380. Rizet thus shows “*a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication.*” as required by claim 14.

381. I therefore conclude that Rizet teaches each and every element of claims 1 and 14, and thus anticipates those claims.

382. It is also my opinion that, in the alternative, Rizet standing alone renders claims 1 and 14 of the ‘395 patent obvious.

b. Claim 8

Limitation [8]: “The wireless telephone of claim 1 configured to allow the user to associate a downloaded digital audio file with a characteristic indicative of a caller such that the associated digital audio file plays when the indicative characteristic is received by the wireless telephone.”

383. Claim 8 depends from Claim 1. As I discuss above, Rizet either anticipates claim 1 or renders it obvious. As set forth below, Rizet also teaches the additional limitation of claim 8, such that claim 8 is also anticipated or rendered obvious by Rizet.

384. As a threshold matter, I understand that the “characteristic indicative of a caller” recited in claim 8 must be broader than just “the caller’s telephone number,” which is recited in claim 9. I understand that, because claim 9 depends from claim 8, it must be narrower than claim 8 to comply with 35 U.S.C. § 112, fourth paragraph.

385. Thus, the “characteristic indicative of a caller” includes not only “the caller’s telephone number,” but also other characteristics. A person of ordinary skill in the art would understand that one such characteristic is the nature of the caller’s “incoming communication” (e.g., telephone call, text messages (SMS), facsimile, etc.).

386. As discussed above, Rizet teaches “a ringing information memory, wherein information or data is stored about the sound a telephone makes when it rings.” *Id.* at 3:14-30. The person of ordinary skill in the art would understand this disclosure to mean that when the “indicative characteristic of a caller” is that the caller is making a telephone call, as opposed to some other form of communication, the Rizet device would play the designated ringing tone from the “ringing information memory.”

387. Therefore, Rizet shows “*The wireless telephone of claim 1 configured to allow the user to associate a downloaded digital audio file with a characteristic indicative of a caller such that the associated digital audio file plays when the*

indicative characteristic is received by the wireless telephone” as recited in claim 8.

388. Thus, I conclude that Rizet either anticipates claim 8 or renders claim 8 obvious.

L. Rizet (Exhibit 1014) in combination with the 1999 WAP Specification (Exhibit 1104)

389. As discussed in greater detail below, the combination of Rizet and the 1999 WAP Specification renders claim 6 is obvious.

1. Overview of the 1999 WAP Specification

390. The 1999 WAP Specification, published six months before Mr. Shanahan filed his provisional application, discloses in detail “a set of specifications to be used by service applications.” Exhibit 1104 at 0005.

391. I will also make reference below to Exhibit 1105, which is a collection of WAP related documents from the relevant time period, as evidence of the level of skill in the art at the time Mr. Shanahan filed his application.

2. Obviousness as to claim 6

Limitation [6]: “The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser.”

392. Claim 6 is dependent on Claim 1, and as discussed above, Rizet either anticipates claim 1 or renders it obvious. The 1999 WAP Specification contains teachings relevant to the additional limitation “wherein the mobile browsing

application includes a Wireless Application Protocol (WAP) compliant browser” recited in claim 6.

393. “The WAP specification initiative begin in June 1997 and the WAP Forum was founded in December 1997.” Exhibit 1105 at 0003. Exhibit 1105 demonstrates that an industry movement to WAP for mobile devices was already underway in 1999 (and even earlier). In my opinion, therefore, WAP was already well known to those of skill in the art by 1999.

394. Indeed, it appears that even Mr. Shanahan believed that WAP was sufficiently well known to those of skill in the art at the time he filed his application that a detailed explanation of WAP was unnecessary: the ‘395 patent contains only a single sentence relating to WAP that barely describes, much less enables, the subject matter of claim 6. *See* Exhibit 1001 at 6:34-36.

395. WAP compliant mobile browsers were also known by 1999. The 1999 WAP Specification succinctly explains that the purpose of WAP was to support mobile phones: “Wireless Application Protocol (WAP) is a result of continuous work to define an industry-wide specification for developing applications that operate over wireless communication networks.” Exhibit 1104 at 0001. To implement this objective, a special language, known as “Wireless Markup Language (WML),” was designed for mobile browsers. *Id.* “WML [was] designed with the constraints of small narrowband devices in mind.” *Id.*

396. In fact, by September 1999, many companies, including Philips, Nokia, Ericsson, and Motorola, had announced or demonstrated mobile phones with WAP-enabled browsers. Exhibit 1105 at 0080, 0077, 0053, 0056. That Philips had announced such a mobile phone is particularly instructive, as Rizet is a Philips publication.

397. WAP servers for downloading ringtones were also available by September 1999. *See, e.g., id.* at 0083 (“Sonera’s WAP service package allows the customer to use his/her WAP compliant handset for example to ... download Doris ringing tones.”).

398. A person of ordinary skill in the art in 1999 would have been readily able to incorporate a WAP-compliant browser, in accordance with the 1999 WAP Specification, into a device according to the teachings of Rizet. First, as discussed above, the WAP Specification was written to support applications on mobile phones. Thus, when building a mobile browsing application for Rizet’s device, the person of ordinary skill in the art would naturally have looked to the 1999 WAP Specification for guidance.

399. Further, one of the specific features of WAP/WML was to provide wireless phone users with a guided menu-based selection system. *See* Exhibit 1104 at 0001 (“Cards specify one or more units of interaction (eg, a choice menu, a screen of text or a text entry field).”); *see also id.* at 0041-42 (specific examples of

guided “menu” selection systems). Riset likewise discloses how a “guided menu” on a cellular phone can be used to browse, review, and download files such as ringtones. Thus, the ordinarily skilled artisan would have looked to the similar teachings of the 1999 WAP Specification as one suitable way to build a “guided menu” within the context of Riset.

400. My conclusion that Riset and the 1999 WAP Specification are readily and logically combinable is bolstered by the fact that, as noted above, Philips, the owner of the Riset patent, introduced its own WAP-enabled mobile phone three months before Mr. Shanahan filed his earliest provisional application. Exhibit 1105 at 0080.

401. Put simply, the 1999 WAP Specification is representative of a well-known industry-wide effort, such that the incorporation of a WAP-enabled mobile browser into Riset would be nothing more than a simple matter of technology adoption driven by market forces.

402. For the foregoing reasons, it is my opinion that one of ordinary skill in the art would readily have combined Riset and the 1999 WAP Specification. Because this combination teaches each and every element of claim 6, it renders that claim obvious.

M. Rizet (Exhibit 1014) in combination with Valentine (Exhibit 1015) or 9110 UM (Exhibit 1070)

403. As discussed above, it is my opinion that Rizet either anticipates claim 8 or renders it obvious, because Rizet teaches a device “configured to allow the user to associate a downloaded digital audio file with a characteristic indicative of a caller such that the associated digital audio file plays when the indicative characteristic is received by the wireless telephone” under a broadest reasonable interpretation that treats the nature of the caller’s “incoming communication” as an “indicative characteristic.” In the alternative, and to the extent Solocron advocates a narrower interpretation of claim 8, it is my view that claim 8 is obvious over the combination of Rizet and either Valentine or the 9110 UM.

404. Both Valentine and the 9110 UM expressly disclose associating a “caller’s telephone number” with a particular audio file (e.g., as recited in claim 9, which depends from and is subsumed within claim 8). I have discussed this aspect of the 9110 UM at length above (*see* Section V.A), and, in the interest of brevity, will not repeat that discussion here.

405. Valentine contains similar teachings: “[D]ownloaded tone data is uniquely associated with a selected telephone number within the mobile telephone unit such that a call to the mobile unit involving the telephone number initiates audio play back of the tone data.” Exhibit 1015 at 0001 (Abstract). *See also id.* at 1:10 (describing “association with a particular telephone number”). The level of

detail set forth in Valentine is far beyond what is provided in the ‘395 patent itself. *See id.* at 4:15-65 and Figure 3.

406. A person of ordinary skill in the art would have been motivated to combine either the 9110 UM or Valentine with Rizet. One of Rizet’s stated goals is that “the personal touch and diversity of adjustments on this [ringtone] point to the wishes of each individual owning a telecommunication device can be honoured in a recognizable, individualized way....” Exhibit 1014 at 2:11-13. It would have been apparent to a person of ordinary skill in the art that one way to achieve this objective would be to associate customized ringtones with the phone numbers of callers, as disclosed in Valentine and the 9110 UM.

407. Moreover, as discussed throughout this Declaration, each of Rizet, Valentine, and the 9110 UM discloses downloading new audio files to use as ringtones. One of ordinary skill in the art would have been motivated by the well-known desire to personalize telephones to evaluate what type of programming and systems could be added to telephones to achieve this level of personalization. For example, nothing in Rizet limits or teaches away from the ability to associate phone numbers with ringtones, such that it would have been a simple matter of technology adoption driven by market forces to incorporate the features of Valentine or the 9110 UM into Rizet.

408. For all of these reasons, it is my opinion that the person of ordinary skill in the art would have been motivated to combine Rizet with either Valentine or the 9110 UM. Because these combinations teach each and every element of claim 8, they render claim 8 obvious.

N. Rizet (Exhibit 1014) in combination with SDMI Open Standard (Exhibit 1078) or Nikkei (Exhibit 1074)

409. As discussed in greater detail below, the combination of Rizet with either the SDMI Open Standard or Nikkei renders claim 10 obvious.

1. Overview of the SDMI Open Standard

410. On July 13, 1999, an industry wide organization known as the Secure Digital Music Initiative (“SDMI”) published an open standard for manufacturers to use with portable devices to provide copyright protection for electronically-distributed music. *See* Exhibit 1078 at 0001 (Press Release). Exhibit 1078 includes the press release and the specification that was being announced. One of skill in the art would readily combine them because they are published by the same organization and one is referring to the other.

411. At the time, SDMI had over 110 members from the “music, consumer electronics and information technology industries,” including Philips, Sony, Sharp, Yamaha, and Samsung. *Id.* at 0001-05. “The [SDMI] specification describes requirements for SDMI-compliant portable devices as well as for applications (including software players and home-library software) and licensed compliant

modules ('LCMs') which provide the necessary interface between SDMI-compliant devices and applications." *Id.* at 0002. The standard "provide[s] a framework for music creators (artists, labels, or any other distributors) and manufacturers of applications and devices to develop and implement products for digital music distribution." *Id.*

412. In accordance with the objective of the SDMI Standard, "Implementations shall protect SDMI Protected Content against unauthorized access, copying and distribution. Implementations shall maintain SDMI Protected Content in a protected state or a protected environment at all times except while such Content is being rendered in decompressed form." *Id.* at 0036.

413. The SDMI Standard included requirements for maintaining security: "Implementations shall be designed and manufactured so as to effectively frustrate attempts to: (i) discover or reveal non-public keys or cryptographic algorithms or other secrets/confidential information used to protect Content in Implementations, (ii) defeat the functions related to Authentication, encryption, decryption, SDMI screening" *Id.*

414. The SDMI Standard also had requirements for protecting content for distribution: "SDMI Protected Content for Distribution - Content that has the following attributes: It is Protected; It is authorized for distribution by the Content

owner or Usage Rules; It has rules embedded, associated and/or attached in a Protected manner; It may be watermarked” *Id.* at 0012-0013.

415. “The specification will answer consumer demand for convenient accessibility to quality digital music, enable copyright protection for artists’ work, and enable technology and music companies to build successful businesses.” *Id.* at 0002.

416. At the time, security risks such as piracy of digital content, were well known to be a significant challenge for successful distribution of digital music: “Record companies have identified the lack of an open . . . standard for security as the single greatest impediment to the growth of legitimate markets for electronic distribution of copyrighted music.” *Id.* at 0011.

417. SDMI’s recognition of the problem (lack of an open standard for security) is significant because it makes clear that it is the record companies that were driving the need for security—not an innovation of the underlying technology. In other words, this is a need driven by the market.

2. The relevant teachings of Nikkei

418. I discuss certain aspects of Nikkei elsewhere in this Declaration. With respect to claim 10, Nikkei also discloses the need to protect copyrights. *See* Exhibit 1074 at 0005 (p.122) (“What we expect from mobile phone business is to protect copyrights”). Nikkei discusses that if CD quality music is used as the

source, then one of the hurdles that must be overcome is negotiating a license not only with JASRAC, but also the record companies. *Id.* at 0003 (p. 118) (Figure 3).

419. Nikkei explains as phones grow in capacity for data storage so will the need for data security. In particular, phones will undergo an “enhancement of data storage capacity [and] security [will] become required when recording or distributing contents such as ‘sounds’.... [T]he mobile phones will be equipped with small memory cards and small hard disk drives. ... For security functions, ... ‘functions to prevent unauthorized copying of received contents’ are likely to be added.” *Id.* at 0006 (p. 125). *See also id.* at 0003 (p. 118) (Figure 3) (discussing need to pay copyright holders such as JASRAC).

3. Obviousness as to claim 10

Limitation [10]: “The wireless telephone of claim 1 wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit.”

420. Claim 10 is dependent on Claim 1. As discussed above, Rizet either anticipates claim 1 or renders it obvious.

421. In the preceding section, I explain where both the SDMI Open Standard and Nikkei disclose the additional element of “wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit” as recited in claim 10.

422. A person of ordinary skill in the art would have been able to combine Rizet with the SDMI Open Standard. SDMI recognized a market need for security, and in particular a need for copyright protection software. *See* Exhibit 1078 at 0002 and 0011.

423. SDMI also documented the motivation to adopt security standards: “Technology companies can reasonably conclude that an SDMI-compliant product will meet the security needs of the record companies and that consumers purchasing such devices will have broad, legitimate access to music.” *Id.*

424. Based on these market realities, one of skill in the art would appreciate that incorporating software protection for the publishers, including for example, SDMI compliant software and modules to make portable devices compliant with the SDMI standard, would be helpful to “build successful businesses.” Thus, one of skill in the art would have combined Rizet’s ringtone database with SDMI-compliant software to “enable copyright protection” and to help “build successful businesses.” *Id.* at 0002.

425. Likewise, the person of ordinary skill in the art would have considered Rizet and Nikkei readily and logically combinable. I have already discussed several factors that make the combination of Rizet and Nikkei proper. Specific to the additional element of claim 10, I note that, based on the need to protect copyrights, and knowing that some form of security is likely going to enhance

negotiations with the copyright owners, one of skill in the art would have been motivated by Nikkei to add copyright protection software to the database of Rizet.

426. For the foregoing reasons, it is my opinion that the person of ordinary skill in the art would readily have combined Rizet with either the SDMI Open Standard or Nikkei. Because these combinations teach each and every element of claim 10, they render that claim obvious.

O. Rizet (Exhibit 1014) in combination with the state of the art as evidenced by Nikkei (Exhibit 1074)

427. I explain above (*see* Section V.K) that claim 14 is either anticipated by or obvious in view of Rizet. Below, I explain how Nikkei bolsters this conclusion, in particular with respect to the use of “digital audio files” in the formats recited in claim 17 (i.e. “MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC)”).

428. Nikkei demonstrates that one of skill in the art would have understood that many different audio file formats, including WAV, MP3, MIDI, and PCM, were available in 1999. *See* Exhibit 1074 at 0003-0004 (teaching that MP3, ATRAC3, and MIDI files were downloadable and usable as ringtones); *id.* at 0006-0007 (discussing an “audio decoding LSI” for playing MP3, ATRAC3, and MIDI formats). Thus, Nikkei establishes that Rizet, in light of the state of the art, teaches each and every element of claim 17.

429. The person of ordinary skill in the art would also have understood that these formats are necessarily digital. This is also clear from the '395 patent itself: claim 17 expressly recites that these formats are “digital audio files.” Thus, Nikkei further demonstrates that Rizet, in light of the state of the art, teaches each and every element of claim 14, including “digital audio files.”

430. I have set forth elsewhere in this Declaration a number of reasons why a person of ordinary skill in the art would have considered Rizet and Nikkei in combination.

431. As such, it is my opinion that Rizet, considered in light of the state of the art as evidenced by Nikkei, renders claims 14 and 17 obvious.

P. 9110 UM (Exhibit 1070)

432. As explained in more detail below, the systems and methods described in 9110 UM anticipate and would have made obvious to a person of ordinary skill in the art claims 1, 8, 14 and 17 of the '395 patent.

1. Overview of 9110 UM

433. As discussed above, 9110 UM describes a system in which a user can select and download audio files and store them in the sounds folder for use as “ringing tones” so that the user can customize the user’s phone. Claim 1 and 14 are very similar for each of the claim limitations, and thus, I have analyzed them

together as indicated below. Any differences are identified and addressed in the analyses below.

2. Comparison of UM to Claims 1, 8, 14 and 17 of the '395 Patent

a. Claims 1 and 14

Claims 1/14 Preamble: “A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for use as an indicia of an incoming communication, the telephone comprising:”

434. The 9110 UM describes a telephone that can be customized by programming a digital audio file, for example, downloading audio files (e.g., audio files having a “.WAV extension and support[s] 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8bit” (Exhibit 1070 at 0143)), which can be played with the “voice recorder” software and the user can then “set them as ringing tones”: “Congratulations on purchasing the Nokia 9110 Communicator. The Nokia 9110 Communicator is a complete communications tool: it is a wireless phone, messaging device, access terminal and a palmtop organizer in one pocketable package.” Exhibit 1070 at 0011.



Figure 1

435. One of skill in the art would understand that a WAV file is a digital audio file.

436. Moreover, claim 17 (“configured to play digital audio files in a format [of] WAV”) of the ‘395 patent, which depends from claim 14, recognizes that a WAV file is a digital audio file.

437. The he 9110 UM expressly states that “You can also use the *sounds* you have recorded with the Digital voice recorder as ringing tones.” Exhibit 1070 at 0123 (emphasis added). The 9110 UM even has a “composer” function to let the user compose her own ringtones which can then be programmed into the phone for customizing the phone. See, e.g., *id.* at 0139-0141 (describing how to use the “Composer” starting on page 129); see also the ringtone depicted in Fig. 4 which illustrates a plurality of notes:

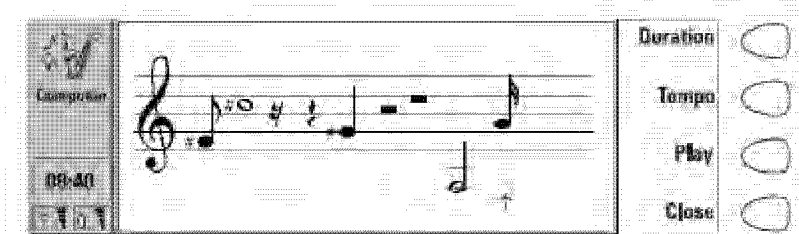


Figure 4

Id. at 0140.

438. The 9110 has software that supports and plays WAV based digital audio files: “NOTE: Sound files that the voice recorder can play have a .WAV

extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

439. Once downloaded, a file can be copied to the sounds folder so it can be selected as a ringing tone: “When you press the Menu button in an opened folder, the following options become available: *Copy* – You can choose a folder into which the selected document will be copied. ... *Copy to sounds* – You can add the selected tune to the list of ringing tones.” *Id.* at 0110.

440. The 9110 further can assign any downloaded file as a ringing tone: “*Default ringing tone* – You can select one of the tones in the pop-up box or compose a special ringing tone for your telephone with the Composer application. See ‘Composer’ on page 129. You can also use the sounds you have recorded with the Digital voice recorder as ringing tones. See ‘Voice recorder’ on page 132.” *Id.* at 0123.

441. The 9110 can access the Internet, for searching and downloading files: “The World Wide Web: The Nokia 9110 Communicator supports HTML 3.2....” *Id.* at 0095. UM provides detailed instructions on how to use the web browser on the 9110 to navigate the World Wide Web and to subscribe to “Internet services”. See, e.g., *id.* at 0099-0102 (the section is entitled “To navigate in WWW”). In addition, any web page may be stored locally and retrieved: “Tip: To fetch WWW pages stored in the ...Downloaded files folders of the communicator or the

memory card use the prefix ‘file:///’ (note: three slashes) instead of ‘http://’.” *Id.* at 0096.

442. The web browsing capabilities on the phone include a search/find feature: “When you have a WWW page open and you press the Menu button, the following options become available: *Add bookmark* – Adds the current address to the Bookmarks list. ... *Find* – You can search for various items, such as words in the WWW page. *Open file* – You can open files from the ... Downloaded files folder.” *Id.* at 0100.

443. UM9110 thus shows “A wireless telephone that may be customized by programming a digital audio file into the wireless telephone for use as an indicia of an incoming communication” as required by claims 1 and 14.

Limitation [1a/14a]: “a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files”

444. The 9110 telephone described in the 9110 UM includes a cellular communications link that is capable of connecting to databases in remote computers (e.g., websites of “service providers” that provide services to “subscribers”) that include audio files: “The communicator interface includes many organiser and communications applications.” *Id.* at 0012. *See also id.* at 0025 (“The coloured application buttons on the communicator keyboard are used to start the corresponding applications [including] Internet and modem-based

applications.”), *Id.* at 0083 (“Internet applications ... World Wide Web (WWW) – A hypertext-based system for finding and accessing resources on the Internet.”).

445. The 9110 uses a radio transmitter to establish a wireless communications link “with remote computers”: “As with any other radio transmitting device, do not touch the antenna unnecessarily when the phone is switched on.” *Id.* at 0146.

446. The 9110 utilizes the GSM network which make it capable of communicating with other devices reachable from the GSM network: “Facts about cellular data transmission[:] The Nokia 9110 Communicator employs the data transmission capabilities of the GSM network to send faxes, short messages and e-mail, and to establish connections with remote computers. Cellular data connections can be made from most locations where your wireless phone operates.” *Id.* at 0014.

447. The 9110 displays the following icon to indicate “An open data connection [to the] ‘Internet’”:



Id. at 0023.

448. Thus, the 9110 is capable of communicating with Internet servers, which may contain databases of digital audio files. A person of ordinary skill in

the art would also understand that these databases can contain a plurality of lists of such audio files. One of skill in the art would also understand that connecting to a webserver using the internet browser on the 9110 would constitute a substantially direct connection.

449. In addition, as I discuss above, the 9110 UM explains that the audio files usable by the 9110 as ringing tones “have a .WAV extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

450. 9110 UM thus shows “a communications link capable of connecting substantially directly to a remote database that includes a plurality of lists of digital audio files” as required by claims 1 and 14.

Limitation [1b/14b]: “a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;”

451. The 9110 UM describes the 9110’s display and a mobile browsing application that allows a user to browse and select audio files from the Internet.

Fig. 5 depicts the display:

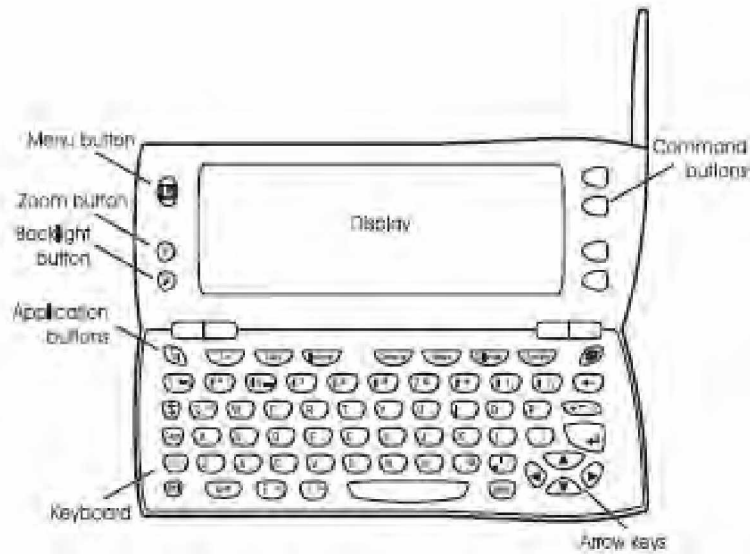


Figure 5

Id. at 0021.

452. UM provides detailed instructions on how to use the web browser on the 9110 to navigate the World Wide Web and to subscribe to “Internet services”. *See, e.g., id.* at 0099-0102 (the section is entitled “To navigate in WWW”).

453. The UM discloses how to set up an Internet access point if the user has not already done so: “[T]his service provides you a convenient way to set up the internet connection. ... You can subscribe to the Internet services of selected providers in your country directly with your Nokia 9110 Communicator, provided that the data service is activated for your SIM card. See the instructions below.... When the connection has been made, follow the instructions on the display to select a service provider and to subscribe to their Internet services.” *Id.* at 0084.

454. The browser in the 9110 provides the capability “[t]o fetch a WWW page 1) Select an entry in the Bookmarks list or enter a URL in the address field. 2. Press Go.” *Id.* at 0096.

455. When browsing a web page, the 9910 provides the capability to navigate through hyperlinks: “[w]hen the page is on the display, use the arrow keys to scroll the view and to choose hyperlinks and hotspots. Each arrow key press selects the nearest hyperlink or hotspot, or moves the view one line up or down. See Figure 8.”



Figure 8

Id. at 0099. See also 107 (“To use the browser – Press the arrow keys on the keyboard to move from one hotspot to another. To follow a hyperlink, press Fetch. With Change you can tick off boxes and buttons.”); *id.* at 0175 (“A WWW page may contain hotspots, such as selection lists, text entry fields, and reset/submit buttons, which enable you to input information into the World Wide Web.”).

456. UM also teaches how to use the 9110 in a text mode to access “Operator services” from “network operators”: “With Text Web you can fetch information from the Internet, using SMS. Such information can include for

example flight schedules, weather reports and stock news. You can also access services provided by your network operator and Nokia.” *Id.* at 0107.

457. Network operators may also provide services that may be accessed via the 9110: “Operator services - The Operator services allows the network operator to provide various services to the subscribers. The operator-specific items may vary from subscriber to subscriber, and can be updated by the network operator.” *Id.* at 0107.

458. Moreover, the web browser provides the capability for a user to search and select the contents of the website using the “*Find*” function or to browse and select the contents using the “*Save*” function: “When you have a WWW page open and you press the Menu button, the following options become available: ... *Find* – You can search for various items, such as words in the WWW page. ... *Save* – Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.” *Id.* at 0100-0101.

459. UM discloses how to navigate and save content from the web into a local folder: “Folders in the Notes main view are: ... Downloaded files – Documents downloaded with the Internet applications.” *Id.* at 0109; *see also id.* at 0168 (“Note: Downloaded ... recordings may take up significant amounts of memory space.”).

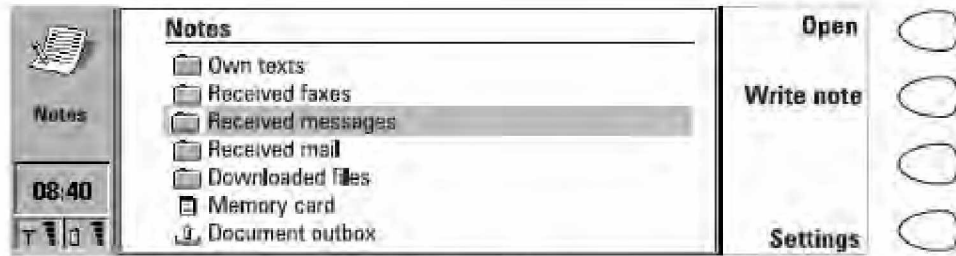


Figure 1

Id. at 0109.

460. Thus, UM teaches a user how to use an Internet browser on a phone to access available remote websites via a wireless communications link and download, as well as save, files into a “downloaded files” directory, which is a programmable memory.

461. 9110 UM thus shows “a display screen and a mobile browsing application that allows a user of the wireless telephone to browse at least one of the plurality of lists of digital audio files and view selectable digital audio files present in the browsed list;” as required by claims 1 and 14.

Limitation [1c]: “a speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone; and”

Limitation [14c]: “processing circuitry configured to receive a selected digital audio file from the communications link; and”

462. The 9110 telephone is an intelligent communicator that functions like a portable computer in that it can run preinstalled software as well as software that is downloaded. It has a screen, keyboard and internal processor with software

configured to process data transfer protocols utilized by Internet web servers, including HTTP and TCP/IP: “The communicator interface contains many organizer and communications applications. The large keyboard, command buttons and display make using the applications easy.” *Id.* at 0012. Furthermore, as a mobile device, the 9110 contains circuitry to selectively distinguish data carried via radio waves addressed to it from data addressed to other mobile devices in the vicinity: “The Nokia 9110 Communicator employs the data transmission capabilities of the GSM network to send faxes, short messages and e-mail, and to establish connections with remote computers...Cellular data connections can be made from most locations where your wireless phone operates. However, it is recommended that you move the communicator to a location where the strongest possible cellular signal can be obtained. When the signal is strong, data transmission is efficient.” *Id.* at 0014. Such software for supervising the receipt of data does so for all types of data received, irrespective of what such data contains.

463. Thus, regardless of whether an audio file is downloaded and saved using the Internet browser, received as an SMS message, or received as an application attachment to an email, the 9110 telephone has processing circuitry that monitors receipt.

464. For example, the 9110 monitors for receipt of email and attachments and notifies the user when an attachment is received audibly and visually: “When

you receive a short message, the text *Message received* and the [text message icon] indicator will be displayed and a tone will sound...” *Id.* at 0153.

465. In addition, the receipt of a specific type of data may trigger a specific ringing tone: “*Application tones: Calendar alarm, ... Received SMS, Received mail* – For each of these items you can set a specific ringing tone. You would then be able to tell by the tone whether you have received a fax, or a short message, for example.” *Id.* at 0124.

466. When, for example, an email with an attachment is received, the software provides for options on what the user may do with the attachment: “When you open a received mail, the following commands become available: **Attachments** -- Lists all MIME attachments: text, image audio, video or application. ... When viewing the list of attachments, you may select an attachment and choose from the following options: **View** – Opens the attachment if there is enough memory and if the message can be opened in the communicator; **Save** –Saves the attachment in the Downloaded files folder...” *Id.* at 0093-94.

467. Further, if a ringtone is downloaded from the Internet, 9110 UM describes two levels of supervising the receipt. First, when surfing the Internet, the 9110 monitors data as it is being received (e.g., “display” shows the “status of the connection” and “how many bytes of the page have been received) and further confirms receipt by making certain tools available after a page has been

downloaded: “When the WWW page is being fetched, the line on top of the display shows the status of the connection, the title of the page, and how many bytes of the page have been received.” *Id.* at 0099. One of ordinary skill in the art would have understand that the protocols involved in fetching WWW pages include HTTP running over TCP/IP, and the TCP/IP protocol comprises sending acknowledgements as data is being transferred, and sending handshake acknowledgements when all data is transferred and the TCP session is to be closed.

468. Moreover, supervision of receipt is inherent in downloading a file (from the Internet) into a file directory such as the Downloaded files folder: “After the WWW page has been fetched, the following commands become available: *Go* – If there is a link to another WWW page in the currently open page, select the link with the selection frame and press *Go* to fetch the page.....” *Id.* at 0100. “When you have a WWW page open and you press the Menu button, the following options become available: ... *Find* – You can search for various items, such as words in the WWW page. ... *Save* –Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.” *Id.* at 0100. *See also id.* at 0109-0113 (relating to management of documents stored on the phone). Also, the 9110 UM discloses that the phone has electronic circuitry: “Keep it dry. Precipitation, humidity, and liquids contain minerals that will corrode electronic circuits. ...Do not store in cold areas. When the

communicator warms up ... moisture can form inside the communicator, which may damage electronic circuit boards. Rough handling can break internal circuit boards.” UM at *Id.* at 0169

469. After the file has been copied to the “Downloaded files” directory, the user may review it in several ways before further downloading to another programmable memory in the wireless telephone.

470. For example, the user can visually review the file. As discussed in connection with element [1a, 1b] above, the user can save files off the Internet to the “Downloaded files” folder and then browse those folders and review items using the Notes applications. *Id.* at 0109-0110.

471. “When you open a document, the document is opened in the appropriate editor or viewer. The available commands vary according to the editor/viewer” *Id.* at 109.

472. The UM describes that the 9110 phone has a “handsfree loudspeaker” (*id.* at 0023,0059) that permits the user to adjust the volume (*id.* at 0059) as well as play WAV-based sound files that may be stereo or mono using PCM.

473. The 9110 discloses an earpiece on the rear of the device. *Id.* at 0147; see also Figure 1 (*id.* at 0018) for speaker.

474. Using the earpiece or loudspeaker, the user may review files using the voice recorder program. “Voice recorder ... You can also listen to your recordings

and other sound files.” *Id.* at 142. See also other Voice Recorder menu options *id.* at 142-43. “Sound files that the voice recorder can play have a WAV extension ...” *Id.* at 143. In addition, recorded audio may be used as ringing tones: “Tip: With the Voice recorder you can record sounds and speech and set them as ringing tones. See ‘Telephone settings’ on page 53.” *Id.* at 0142.

475. The user may then copy the downloaded files to the sounds directory for use as a ringtone: “When you press the Menu button in an opened folder, the following options become available: ... *Copy to sounds* – You can add the selected tune to the list of ringing tones.” *Id.* at 0110.

476. The user may also copy the sounds to/from the memory card. “Copy to memory card — Copies the selected recording to the memory card. Copy from memory card — Copies the selected recording from the memory card to your communicator.” *Id.* at 143. See also *id.* at 0118 (describing the memory application which allows a user to “open up a list of folders and other data in the communicator” including the memory card); and *id.* at 0032, 0109, 0143 for further discussion of memory card.

477. It is my opinion that based on the discussion above, one of skill in the art would understand that the phone described in UM is a smart phone that has a processor, and further would conclude that UM discloses processing circuitry that

both supervises receipt of incoming communications and receives those incoming communications.

478. It is also my opinion that processing circuitry configured to receive a downloaded file is inherent in the phone described in the UM because it uses folders such as the Downloaded files folder to save downloaded files. The phone necessarily has a processor-based circuit to receive RF signals and convert them to useable information, and necessarily receives the data so that it can update the folders to reflect the newly downloaded file (such as storing a downloaded file in the downloaded files folder).

479. It is also my opinion based on the discussion above that the 9110 has a speaker and processor circuitry that can be used to review an audio file with a browsing application on the mobile phone before programming it in the phone for use as a ringtone.

480. 9110 UM thus shows “*a speaker and processing circuitry configured to allow the user to optionally review a selected digital audio file with the mobile browsing application before downloading the selected digital audio file into the wireless telephone*” as required by claim 1.

481. 9110 UM thus shows “*processing circuitry configured to receive a selected digital audio file from the communications link*” as required by claim 14.

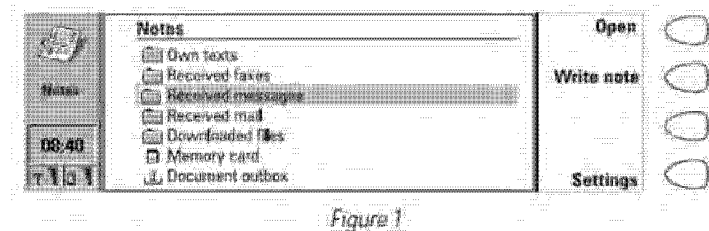
Limitation [1d]: “a programmable memory circuit for allowing the user to optionally store the selected digital audio file for use as an indicia of an incoming communication.”

Limitation [14d]: “a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication.”

482. As discussed above, the only difference between these two elements is that 1d includes “digital” before “audio file”; since “the selected audio file” is a “digital audio file”, there is no substantive difference.

483. The 9110 UM describes the 9110 telephone as having two memories that can be programmed with ringing tones—an internal memory (which has a “sounds” folder” which contains a “list of ringing tones”) and a removable “memory card” which can also store sounds. The phone includes an application called “Notes” for managing documents that are downloaded, whether from the Internet or from an attachment (either email or other application). Once downloaded into the “Downloaded files folder,” the “Notes” application gives the user the ability to copy a downloaded file into the “sounds” folder for use as a ringtone: “Notes is used for ... managing various documents stored in the communicator. Note: When you open a document, the document is opened in the appropriate editor or viewer. The available commands vary according to the editor/viewer. Folders in the Notes main view are: ... Downloaded files – Documents downloaded with the Internet applications.” *Id.* at 0109

484. The “Downloaded files” folder, as well as the “Memory card” folder, are depicted in Fig. 1:



Id. at 0109.

485. UM also teaches how to copy to and from the memory card: “*Copy to memory card* — Copies the selected recording to the memory card. *Copy from memory card* — Copies the selected recording from the memory card to your communicator.” *Id.* at 143.

486. Of course, a file, such as an audio file can be downloaded from the Internet: “When you have a WWW page open and you press the Menu button, the following options become available: ... Find – You can search for various items, such as words in the WWW page. ... Save –Saves the page contents or the image to the Downloaded files folder, or adds the address to the page of the Bookmarks list.” *Id.* at 0100-0101. “To fetch a WWW page 1) Select an entry in the Bookmarks list or enter a URL in the address field...” *Id.* at 0096.

487. If a ringing tone is received as an attachment to an email, the attachment can be saved to the Downloaded files folder and then copied to the sounds folder: “When you open a received mail, the following commands become


available: Attachments -- Lists all MIME attachments: text, image, audio, video or application. ... When viewing the list of attachments, you may select an attachment and choose from the following options: View – Opens the attachment if there is enough memory and if the message can be opened in the communicator; Save –Saves the attachment in the Downloaded files folder...” *Id.* at 0093-94. MIME may be used to attach audio files: “MIME [is a] standard Internet format which permits including multiple mail objects in a single message [including, for example] audio fragments.” *Id.* at 0176.

488. Once an audio file is downloaded, it can become available for use as a ringtone by copying the file to the “sounds” folder which adds “the selected tune to the list of ringing tones”: “When you press the Menu button in an opened folder, the following options become available: Copy – You can choose a folder into which the selected document can be copied. ... Copy to sounds – You can add the selected tune to the list of ringing tones.” *Id.* at 0110.

489. The 9110 contains applications to browse the contents of the memory: “System contains the following applications: ...Memory, ... Memory Card tool...” *Id.* at 0123.


490. The memory applications allow the user to show the contents of the phone’s programmable memory circuits: “This [Memory] application shows the amount of available free memory for storing data.... Press Details to open up a list

of folders and other data in the communicator. The list shows how much memory each of them takes up.... If your memory card is inserted in the communicator, press Memory card to check the amount of available memory in the card.” *Id.* at 0128.

491. In addition to the internal memory circuit, the 9110 includes a removable “memory card” which is a second programmable memory circuit that can be used to store “ringing tones”: “A memory card may contain documents, contact databases, applications.....etc. When a memory card is inserted in the communicator, the memory card contents are marked with the memory card icon  in the corresponding applications. For example, the documents on the memory card are located in a folder shown in the folders list of the Notes application.” *Id.* at 0032.

492. The 9110 UM includes programmable “profiles” that can be set to determine which ringing tone is played when a call is received: “Profiles – With this setting you can modify the profiles. The available profiles are: ... Ringing tone – Determines the ringing tone. To compose your own ringing tone, see ‘Composer’ on page 139, and to record a ringing tone with the Digital voice recorder, see ‘Voice recorder’ on page 132.” *Id.* at 0063-64; *see also id.* at 0149 and 0152. In addition, recorded audio may be used as ringing tones: “Tip: With

the Voice recorder you can record sounds and speech and set them as ringing tones. See ‘Telephone settings’ on page 53.” *Id.* at 0142.

493. UM teaches how an audio file stored in the sounds folder can be assigned and used as a ringing tone to a contact stored as a contact card: “**Contact card options** – When you press **Options** in an opened contact card, the following options become available: Ringing tone – You can set a specific ringing tone for each contact in the Contracts directory. Select a tone from the list and press Select. The  icon appears at the top of the contract card. See Figure 2. In order to use this function, however, the individual ringing tones setting must first be set on. See ‘Telephone settings’ on page 53.” *Id.* at 0052.

494. 9110 UM thus shows “*a programmable memory circuit for allowing the user to optionally store the selected digital audio file for use as an indicia of an incoming communication.*” as required by claims 1.

495. 9110 UM thus shows “*a programmable memory circuit for allowing the user to optionally store the selected audio file for use as an indicia of an incoming communication.*” as required by claims 1.

496. Thus, it is my opinion that the 9110 UM anticipates, and in the alternative, renders obvious claims 1 and 14.

497. In the event that the patent owner argues that any element is missing in the 9110 UM, it is my opinion that any such element is, at most, an obvious

variation and does not reflect any novelty in claim 1. For example, on the “optionally review” term in claim [1c], 9110 UM describes at least as much as is present in the ‘395 patent with respect to the concept of reviewing (be it visually or audibly) an audio file before programming that file to be a ringtone for an incoming communication. The ‘395 patent does not explain how an audio file can be reviewed “before downloading... to the wireless phone.” If such an operation merely requires that a browser invoke appropriate hardware or software based upon the specific type of file (e.g., audio file) being browsed, such technologies were well known in the art as of March 2000 and referenced in 9110 UM. For example, 9110 UM teaches the ability “to download additional software” in which “The WWW application can be used to install applications and plug-ins on your communicator. If you install plug-ins, the WWW application activates them if necessary.” Exhibit 1070 at 0101-0102. 9110 UM then describes the specific procedure for installing such plug-ins. Exhibit 1070 at 0102. This would teach one of skill in the art that plug-ins, such as browser plug-ins to play multimedia files including audio files (which are well-known), are usable with 9110 UM’s “WWW application” to play and preview such files before downloading into a programmable memory.

b. Claim 8

Limitation [8]: “The wireless telephone of claim 1 configured to allow the user to associate a downloaded digital audio file with a

characteristic indicative of a caller such that the associated digital audio file plays when the indicative characteristic is received by the wireless telephone.”

498. Claim 8 depends from Claim 1. As I discuss above, 9110 UM either anticipates claim 1 or renders it obvious. As set forth below, 9110 UM also teaches the additional limitation of claim 8, such that claim 8 is also anticipated or rendered obvious by 9110 UM.

499. As discussed above, I understand that the “characteristic indicative of a caller” recited in claim 8 must be broader than just “the caller’s telephone number,” which is recited in claim 9. I understand that, because claim 9 depends from claim 8, it must be narrower than claim 8 to comply with 35 U.S.C. § 112, fourth paragraph.

500. Thus, the “characteristic indicative of a caller” includes “the caller’s telephone number” and other characteristics. One such characteristic is the nature of the “incoming communication,” which a person of ordinary skill in the art would understand to include communications such as telephone calls, text messages (SMS), facsimile, and the like.

501. In addition, the 9110 UM discloses associating a caller’s phone number with a particular “ringing tone.” See Exhibit 1070 at 0052. In particular, 9110 UM teaches setting up “Contact Cards” for different contacts (people). *Id.* at 0049-52. These contact cards include a number of “fields” such as “name,” and

telephone numbers (e.g., “Tel(Home)”). *Id.* at 51. 9110 UM also teaches that the Contact Cards include a ringing tone associated with that contact. *Id.* at 0052 (“... *Ringing tone* – You can set a specific ringing tone for each contact in the Contacts directory. Select a tone from the list and press Select.” *Id.* at 0052. Once the association is created, a special icon appears on the contact card. *Id.*

502. Therefore, 9110 UM shows “*The wireless telephone of claim 1 configured to allow the user to associate a downloaded digital audio file with a characteristic indicative of a caller such that the associated digital audio file plays when the indicative characteristic is received by the wireless telephone*” as recited in claim 8.

503. Thus, I conclude that 9110 UM either anticipates claim 8 or renders claim 8 obvious.

c. **Claim 17**

Limitation [17]: “The wireless telephone of claim 14 wherein the speaker and processing circuitry is configured to play digital audio files in a format selected from the group comprising: MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC).”

504. Claim 17 depends from Claim 14. As I discuss above, 9110 UM either anticipates claim 14 or renders it obvious. As set forth below, 9110 UM also teaches the additional limitation of claim 8, such that claim 8 is also anticipated or rendered obvious by 9110 UM.

505. The UM describes that the 9110 phone has a “handsfree loudspeaker” that permits the user to adjust the volume as well as play WAV-based sound files that may be stereo or mono. The 9110 has software that supports and plays WAV audio files, including “stereo”: “NOTE: sound files that the voice recorder can play have a .WAV extension and support the following audio format: 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8 bit.” *Id.* at 0143.

506. The 9110 also includes a loudspeaker that allows for handsfree operation. For example, the following icon indicates that “[y]ou have a voice call, and the handsfree loudspeaker and microphone are on. See ‘Handsfree mode’ on page 59.”



Exhibit 1070 at 0023.

507. The speaker volume may also be adjusted: “[a]fter the audio has been set on, the command changes to Volume. Press Volume to adjust the speaker volume...” *Id.* at 0059. *See also id* at 0147 (raising the volume on the earpiece).

508. The speaker is located on the rear of the device:

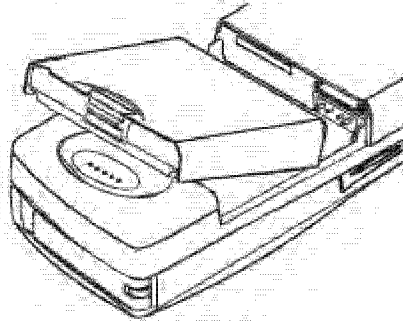


Figure 1

Id. at 0018.

509. Therefore, 9110 UM shows “The wireless telephone of claim 14 wherein the speaker and processing circuitry is configured to play digital audio files in a format selected from the group comprising: MIDI, MPEG, MP3, WAV, PCM, Windows Media Audio code (WMA), or Adaptive Transform Acoustic Coding (ATRAC)” as recited in claim 17.

510. Thus, I conclude that 9110 UM either anticipates claim 17 or renders claim 17 obvious.

Q. 9110 UM (Exhibit 1070) And One Of 1999 WAP Specification, 1999 Nokia Press Releases Or Nykenen

511. As set forth in detail below, claim 6 is obvious over the 9110 UM in combination with one of 1999 WAP Specification, 1999 Nokia Press Releases or Nykenen.

1. Overview of WAP References

a. Exhibit 1105 - WAP Specification

512. As discussed above, the 1999 WAP Specification published six months before Mr. Shanahan filed his provisional application and it sets forth in detail “a set of specifications to be used by service applications.” Exhibit 1104 at 0005.

b. Exhibit 1096 and Exhibit 1098 – Nokia Press Releases

513. As discussed above, Exhibit 1096 and Exhibit 1098 are press releases issued by Nokia, in June 1999 and February 2000, respectively, and were distributed widely and publicly available on Nokia’s website at <http://www.nokia.com/press/releases/index.html>.

c. Exhibit 1103 – U.S. Patent No. 6,661,784 to Nykanen

514. As discussed above, Nykanen was filed on March 2, 1999 and issued on December 3, 2003. Nykanen also claims priority to a Finnish patent application filed on March 3, 1998.

2. Obviousness of Claim 6

Limitation [6]: “The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser.”

515. Claim 6 recites “The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser.”

516. The ‘395 patent has just one sentence in the specification related to WAP: “Such a browser may be a Wireless Application Protocol (WAP) compliant browser for supporting wireless Internet services.” Exhibit 1001 at 6:34-36. The ‘395 does not describe or enable any aspect of WAP nor does it teach how WAP might be “included” in a mobile browser as required by claim 6.

a. **Combining Exhibit 1070 (Nokia 9110) with Exhibit 1105 (WAP Specification)**

517. As discussed above, the 1999 WAP Specification published six months before Mr. Shanahan filed his provisional application and it sets forth in detail “a set of specifications to be used by service applications.” Exhibit 1104 at 0005.

518. Also discussed in detail in ¶¶ 393-398, one of skill in the art in 1999 would have readily known about WAP and the 1999 WAP Specification. For all the reasons discussed in that section above, the 1999 WAP Specification discloses all of the elements of claim 6 (and much more). One of skill in the art would have been motivated to combine the 1999 WAP Specification with 9110 UM because Nokia was a founder and pioneer of the entire WAP forum. Exhibit 1105 at 0050. As was known in 1999 (and discussed in ¶¶395-396), the entire industry

understood the need to improve the ability of mobile phones to download files and access products and services on the Internet. The 9110 UM describes such a system with its own Internet browser. Moreover, Nokia issued many, many press releases, white papers and products in 1999 using WAP. E.g., Exhibit 1105 at 0059-0076. On, June 30, 1999 “Nokia Announces The Nokia WAP Browser” in a press release. Exhibit 1096. Thus, one of skill in the art would have been motivated to combine the Nokia 9110 UM with the 1999 WAP Specifications based upon the vast connection between Nokia and the WAP effort.

519. The combination of 9110 UM and the 1999 WAP Specification thus shows “*The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser*” as recited in claim 6.

b. Combining Exhibit 1070 (Nokia 9110) with Exhibits 1096 and 1098 (Nokia Press Releases)

520. Nokia’s 9110i Press Release, entitled “The Nokia 9110i Communicator offers WAP services to the large community of knowledge workers” stated: “The Nokia 9110i Communicator will continue to support the Internet browsing and e-mail services, but the add-on WAP application will provide users with access to a new emerging group of mobile Internet services.” Exhibit 1098 at 0001. The Nokia 9110i Press Release teaches at least as much as

the '395 patent regarding the WAP and therefore this combination invalidates claim 6.

521. The June 30, 1999, press release in which “Nokia Announces The Nokia WAP Browser” states: “The Nokia WAP Browser is a software product that can be ported and integrated to wireless devices, like mobile phones.” Exhibit 1096. at 0001. The Nokia browser software provides ... support for secure data transmission... and the WAP Protocol Stack for transporting data over wireless bearer services.” Id.

522. Each of the Nokia Press Releases contains more information about WAP than does the '395 patent. To the extent that the '395 patent must rely upon the knowledge of one skilled in the art to have enabling disclosure of WAP (and it must), that same knowledge is available for purposes of obviousness.

523. One of skill in the art would be motivated to combine these press releases with the 9110 UM because they relate to the same basic product (Nokia phones) and to specific software (the Internet browser) on that device. Exhibit 1097 at 0001, Exhibit 1098 at 0001. Indeed, the Nokia 9110i Press Release pertains to a variant of the same device (9110) as does the 9110 UM. Further confirming the motivation is that Nokia announced at the same time as the Nokia 9110i Press Release that “users of the existing 9110 Communicators will be able to

upgrade their devices to be WAP compatible with an accessory package.” Exhibit 1097 at 1.

524. The combination of 9110 UM and the Nokia Press Releases thus shows “*The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser*” as recited in claim 6.

c. Combining Exhibit 1070 (Nokia 9110) with Exhibit 1103 (U.S. Patent No. 6,661,784 to Nykanen)

525. Nykanen (Exhibit 1103) provides express disclosure of a WAP browser. Nokia filed Nykanen on March 3, 1998 in Finland, and Nokia filed a corresponding application in the United States on March 3, 1999. Exhibit 1103 at 0001. Nykanen describes and enables the concept that the ‘395 patent references in a single sentence: using WAP browsers in a mobile phone.

526. Nykanen expressly discloses the use of a WAP internet browser for the purposes of communicating with, and transmitting data from, a server on the Internet. “The purpose of the invention is particularly to define a system for communication between a WAP server and a WAP client complying with the WAP application....” *Id.* at 3:9-12. “[D]ifferent applications and information is presented by means of standardized presentation formats which are browsed e.g. by means of known WWW browsers. Thus, the servers and information in the

WWW network are named according to a Uniform Resource Locator (URL) address complying with the Internet standard.” *Id.* at 3:26-31.

527. Nykanen even discloses various wireless networks that can be used with a WAP browser, including GSM, CDMA, IR and other. 2:41-43; 4:25; 4:52; 4:67. Figures 3(a), 3(b) and 4 show transmissions using the various elements of the WAP protocol. The invention details various transmissions to “WAP clients” including WML browsers. 4:38-45. *See* 12:11-13:65 (describing the transmission of data from WAP servers to WAP-enabled mobile stations / clients with WAP browsers).

528. One of skill in the art would be motivated to add Nykanen to 9110 UM for all of the same reasons stated above with respect to Nokia’s deep involvement in the WAP effort. This is Nokia’s patent directed to the WAP technology intended for use in mobile phones, such as the 9100. Moreover, Nykanen expressly references the “Nokia 9000 Communicator” as an exemplary “mobile station” and then goes on to describe the invention in terms of use with a “mobile station” or “MS” throughout the entire patent. *E.g., id.* at 1:63-65. The 9110 is a related product to the 9000. 9110 UM and Nykanen come from the same company and generally discuss similar topics including the provision of data to applications on a mobile phone using wireless networks and Internet browsers.

The person of skill in the art would have been motivated to combine Nykanen with Nokia 9110.

529. The combination of 9110 UM and Nykanen thus shows “*The wireless telephone of claim 1 wherein the mobile browsing application includes a Wireless Application Protocol (WAP) compliant browser*” as recited in claim 6.

R. 9110 UM (Exhibit 1070) and Either Nikkei (Exhibit 1074) or SDMI (Exhibit 1078)

530. As set forth in detail below, claim 10 is obvious over the 9110 UM in combination with either Nikkei or SDMI.

1. Overview of Copyright Protection References

a. Exhibit 1074- Nikkei

531. As discussed above, ¶¶ 229-233 and 418-419, on November 15, 1999, Nikkei Electronics published a magazine that included several articles directed to the evolution of incorporating music into mobile phones, including polyphonic ringtones and MP3 content. Exhibit 1074 (appearing at pages 116-127).

b. Exhibit 1078– SDMI

532. As discussed above, ¶¶ 410-417, on July 13, 1999, an industry wide organization known as the Secure Digital Music Initiative (“SDMI”) published an open standard for manufacturers to use with portable devices to provide copyright protection for electronically-distributed music. *See* Exhibit 1078 at 0001 (Press Release). Exhibit 1078 includes the press release and the specification that was

being announced. One of skill in the art would readily combine them because they are published by the same organization and one is referring to the other.

2. Obviousness as to claim 10

Limitation [10]: “The wireless telephone of claim 1 wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit.”

533. Claim 10 is dependent on Claim 1. As discussed above, 9110 UM either anticipates claim 1 or renders it obvious.

534. I explained above, ¶¶ 410-419 where both the SDMI Open Standard and Nikkei disclose the additional element of “wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit” as recited in claim 10.

535. A person of ordinary skill in the art would have been able to combine UM 9110 with the SDMI Open Standard. SDMI recognized a market need for security, and in particular a need for copyright protection software. *See* Exhibit 1078 at 0002 and 0011. *See* also ¶¶ 418-419 *supra*.

536. SDMI also documented the motivation to adopt security standards: “Technology companies can reasonably conclude that an SDMI-compliant product will meet the security needs of the record companies and that consumers purchasing such devices will have broad, legitimate access to music.” *Id.*

537. Based on these market realities, one of skill in the art would appreciate that incorporating software protection for the publishers, including for example, SDMI compliant software and modules to make portable devices compliant with the SDMI standard, would be helpful to “build successful businesses.” Thus, one of skill in the art would have combined the phone described in the 9110 UM with SDMI-compliant software to “enable copyright protection” for any copyrighted content that is downloaded from the web, which will help to “build successful businesses.” *Id.* at 0002.

538. Likewise, the person of ordinary skill in the art would have considered 9110 UM and Nikkei readily and logically combinable. I have already discussed several factors that make the combination of 9110 UM and Nikkei proper. Specific to the additional element of claim 10, I note that, based on the need to protect copyrights, and knowing that some form of security is likely going to enhance negotiations with the copyright owners, one of skill in the art would have been motivated by Nikkei to add copyright protection software to audio files being downloaded from the Internet, including ringtones, so that the copyrighted content will be secure when downloaded on the phone described in the 9110 UM.

539. For the foregoing reasons, it is my opinion that the person of ordinary skill in the art would readily have combined 9110 UM with either the SDMI Open

Standard or Nikkei. Because these combinations teach each and every element of claim 10, they render that claim obvious.

540. The combination of 9110 UM and either Nikkei or SDMI thus shows “*The wireless telephone of claim 1 wherein the wireless telephone is configured to prevent the unauthorized distribution of a digital audio file stored in the programmable memory circuit*” as recited in claim 10.

S. 9110 UM (Exhibit 1070) and 9110 FAQ (Exhibit 1083)

541. As set forth in detail below, claim 10 is obvious over the 9110 UM in combination with either Nikkei or SDMI.

1. Overview of 9110 FAQ

542. As discussed above, ¶¶208-213, 9110 FAQ is a publicly available Nokia.com Internet page that was archived on May 8, 1999. Exhibit 1087 at 0008-09 (¶¶ 38-39) and at 0078-0081.

543. 9110 FAQ teaches the user that she can download WAV files from the internet specifically for use as ringtones: “Can you store PC audio .WAV files on the unit? Yes. WAV files can be downloaded from the Internet The WAV files can also be used as ringtones.” Exhibit 1083 at 0004. 9110 FAQ also teaches that the phone plays “Audio files (WAV files as ringtones)” and that the “Voice recorder [can] playback .WAV files.” *Id.* at 0002. 9110 FAQ also further

describes that the speaker produces “superb audio”: “[The Nokia 9110 is an] outstanding mobile phone with ... superb audio and voice quality.” *Id.* at 0002.

544. I believe that the 9110 FAQ bolsters the teachings of 9110 UM regarding downloading WAV files from the Internet and using those WAV files as ringtones. Moreover, the 9110 FAQ does exactly what the inventor said the prior art was incapable of doing in the prosecution history (Exhibit 1007 at 0064 (“the prior art systems of record is incapable of playing such high quality audio”)) because it teaches that the 9110 phone plays WAV-based ringtones and has “superb audio ... quality.” Exhibit 1083 at 0002.

545. Since 9110 UM teaches a phone that supports “.WAV extension [file formats with] 8, 11, 22 or 44khz, PCM/A-law, Stereo/Mono, 8bit” audio (Exhibit 1070 at 0143), one of skill in the art would have found further motivation to use an audio file having polyphonic content, because it would take maximum advantage of the supported formats. Thus, it would have been obvious to use a WAV file that produced audio having multiple simultaneous notes and to set the WAV file as a ringing tone as taught by 9110 UM. *Id.*

2. Combining 9110 UM and 9110 FAQ

546. The 9110 UM and 9110 FAQ relate to the same product (namely, the Nokia 9110). Both documents on their face were intended to publicly distribute information about the 9110 product, and both were produced and distributed by the

same company (Nokia) in the same year (1999). For at least these reasons, one of skill in the art would readily combine these references.

547. While it is my opinion, as set forth in detail above, that the 9110 UM alone either anticipates or renders obvious claims 14 and 17, it is also my opinion that the combination of the 9110 UM and 9110 FAQ renders these claims obvious.

VI. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

548. I understand that Solocron may attempt to rely on evidence of objective evidence of nonobviousness, known as “secondary considerations.” I understand that, in order to establish such secondary considerations, Solocron must show a “nexus” between the alleged claimed invention and the evidence. I do not believe Solocron will be able to show such a nexus for several reasons. First, I understand that, if the secondary considerations result from something other than what is novel in the claim, there is no nexus. Here, as shown above, there is nothing novel about this claim set when compared to prior art references such as Rizet and/or the Nokia 9110 related documents. Thus, it is my opinion that Solocron will not be able to establish such a nexus.

549. Second, I understand that evidence of near-simultaneous invention by others can, under certain circumstances, demonstrate obviousness. As shown above, numerous entities developed the claimed invention before or near Mr. Shanahan’s alleged priority date. I believe that this near-simultaneous invention

confirms my opinion that these claims are invalid. Third, the demand for polyphonic ringtones existed before Mr Shanahan ever filed his patent applications. Fourth, I have not seen any evidence of such secondary considerations. To the extent that Solocron provides such evidence, I reserve the right to supplement my opinion to respond to that evidence.

550. In addition, the fact that others had already developed polyphonic ringtones, including the hardware to support it on mobile phones, such as is described in Nikkei and YMU757 is evidence of obviousness. At a minimum, it is simultaneous or near simultaneous invention, and so, it is my opinion that Mr. Shanahan's invention was merely the product of ordinary skill, and not worthy of patenting.

VII. SUPPLEMENTATION

551. I expressly reserve the right to supplement this declaration based on information provided by the patentee and/or based on additional evidence or testimony.

VIII. CONCLUSION

552. For the reasons set forth above, it is my opinion that the subject matter recited in claims 1, 6, 8, 10, 14, 17, 22, 25, 30, 36, 39 and 40 of the '395 patent was neither novel nor non-obvious as of the filing date of the '395 patent.

Exhibit A to Declaration

Henry H. Houh

Education

Massachusetts Institute of Technology, Cambridge, MA

- PhD in Electrical Engineering and Computer Science, January 1998. "Designing Networks for Tomorrow's Traffic," thesis supervised by Professor David Tennenhouse and Professor John Guttag. GPA 4.7/5.0
- Master of Science in Electrical Engineering and Computer Science, February 1991. "Demonstration of a laser repetition rate multiplier," thesis. GPA 4.5/5.0
- Bachelor of Science in Electrical Engineering and Computer Science, June 1989. "Boundary element analysis of arbitrarily shaped dielectric structures," thesis. GPA 4.7/5.0
- Bachelor of Science in Physics, February 1990. GPA 4.7/5.0

Experience

H3XL Inc. d/b/a Einstein's Workshop (formerly Lexington Robotics)

- 2009 - present: Founder and President. Started local league providing science and engineering education programs based on LEGO Mindstorms, LEGO WeDo, and FIRST LEGO League. In 2012, grew program into a full science, technology, engineering and math enrichment program and creative/maker space, in 7,000 square feet of space. Serve 2,000+ kids and families annually.

Houh Consulting Inc. / Independent Consultant

- 2009 - present: Technical consultant specializing in Social Networking, Web 2.0, Web Site Development, Data Networking, Optical Networking, Telecommunications, Media Streaming and Voice Over IP. Representative clients include: BBN, Covington & Burling LLP, Winston & Strawn LLP, Wilmer Cutler Pickering Hale and Dorr LLP, Kellogg Huber Hanson Todd Evans & Figel PLLC, McGuireWoods LLP, Sidley Austin LLP and startup companies.

Eons

- 2008 - 2009: Chief Technology Officer. Created product that Eons acquired from BBN Technologies. Integrated BBN product with Eons social networking platform and significantly increased the Eons group creation rate. Eons raised \$32 million from General Catalyst Partners, Charles River Ventures, Sequoia Capital, and Intel Capital.

BBN Technologies

- 2007 - 2008: Delta Division, Vice President of Technology. Grew "Boomerang" counter-sniper project engineering team and significantly de-risked \$10 million worth of product deliveries.

Boomerang was a significant asset leading to the acquisition of BBN by Raytheon in 2009. Created new business plan and grew team; launched new fully-featured social networking web site in 5 months.

- 2004 - 2007: Delta Division, Director of Technology, responsible for commercializing IP and creating new businesses. Hired and grew division's initial engineering team. Wrote three business plans, two of which are funded and active. For call center business plan, acted as general manager, hiring and managing engineering team, inside sales team, and identifying and recruiting a new general manager. Identified and recruited other key employees to Delta Division, including senior members of team leading to successful internal sales growth and spin-outs of projects. Contracted by BBN to BBN spin-out PodZinger as VP of Operations and Technology. Identified sales team for counter-sniper system, leading to \$10 million dollars of new sales within 6 months and \$100+ million in additional orders in the following two years.

PodZinger Inc. (BBN spin-out, also known as EveryZing and now RAMP)

- 2006: Vice President of Operations and Technology. Significantly upgraded capability of consumer-facing search site and redeployed web site from company to co-location facility. Identified key portions of infrastructure for upgrading and cost reduction. Hired in operations replacement and phased back to BBN.

Commonwealth Capital

- 2004: Entrepreneur-in-residence (informally), performed technical due diligence on business plans, brainstormed ideas for new businesses with venture partner. With venture partner, left for portfolio company BBN to form core of commercialization team.

Empirix, Inc./Teradyne, Inc.

- 2001 - 2004: Chief Technologist, Engineering Manager, Web Application Test Group. Researched potential new product areas; developed product plan and prototype. Responsible for three new and existing products. Managed off-shore development team. Chief architect for all web testing products. Re-architected core testing product. Provided technical vision for core product.
- 2000 - 2001: Chief Technologist, Communication Infrastructure Test Group. Responsible for incorporating new technology internally, tracking new technologies, technical evaluation of partnerships and potential acquisitions. Helped develop division strategy. Developed plans which formed core capabilities for successful new products introduced in 2004-5.
- 2000 - 2001: Engineering Manager, Communications Infrastructure Test Group. Execution of new product plan developed in prior role. Grew team from four existing engineers to team of over 30 on immediate team and over 40 on project. Delivered new platform in one year. Platform and derivatives accounted for large portion of booked products for the division within 2 years and is currently (2008) a key portion of new product offerings.
- 2000: Empirix was formed as a spin-out of Teradyne in January 2000. Reported to CEO in carve-out of Empirix from Teradyne.
- 1999: (Teradyne) Director of Business Development, Software Test Units. Reported directly to Chairman of the Board/Founder and then to general manager of software test unit (6 divisions of Teradyne). Evaluated and researched acquisition and partnership candidates. Internally assessed

technology position in market and gaps in product lines. Worked with senior division staff to develop new product strategies. Attended internal Teradyne divisional board meetings. Chairman served as my mentor.

3Com Corporation/NBX Corporation

- 1999: Software Engineer 5. Continued work after 3Com acquisition of NBX. Built cross-division relationships for new products and research directions. NBX was acquired by 3Com in March 1999.
- 1997 - 1999: (NBX) Senior Scientist and Engineer. Work in IP Telephony. Architected next-generation product. Protocol design and validation for core protocol now used tens of millions of times daily. Led team in integration of IP protocols into current product. Designed audio reconstruction algorithms. Developed applications for bug analysis and diagnosis of system problems. Implementation of network simulator. Work on collaborative projects with external partners. Worked to identify gaps in product. Representative at numerous trade shows. Innovated novel methods of using product.

MIT Department of Electrical Engineering and Computer Science, Cambridge, MA

- 1991 - 1998: Research assistant, Telemedia Network Systems Group. Design, development, and implementation of Gigabit ATM network for distributed multimedia system. Studied host interface design issues. ATM network simulation.
- Spring 1989, Fall 1990, Spring 1995: Teaching assistant, Computation Structures digital systems course. (Spring 1995 Head TA)
- 1988 - 1989: Head laboratory teaching assistant for Computation Structures. Responsibilities included writing and revising lab assignments, and maintaining the lab.
- 1987: Laboratory teaching assistant for Computation Structures.
- 1987: Design, construction, and programming of 16-bit computer.

Agora Technology Group, Incorporated

- 1994 - 1996: Founder and CEO. Conceived and oversaw development of targeted advertising-supported Web sites. Responsible for company's vision and direction. Sold company intact; is currently an operating stand-alone company.

AT&T Bell Laboratories, Holmdel, NJ

- 1989 - 1990: Implementation of cascadable all-optical fiber logic gate. Modelocking of all-fiber erbium laser. Construction of modelocked laser repetition rate booster. Strong optics laboratory and fiber optic experience.
- Summer 1988, 1987: Research in integrated optics. Analysis of rectangular waveguides using microwave modeling. Fabrication of integrated optical components.

Honors

- MIT Alumni Association Great Dome Award, 2010, Baker 60th Anniversary Reunion Co-Chair (highest group award given by MIT Alumni Association)

- MIT Alumni Association Presidential Citation Award (now known as Great Dome), 2008, Member of MIT Chairman's Salon committee
- MIT Alumni Association Bronze Beaver Award, 2007 (highest individual award given by MIT Alumni Association)
- MIT Alumni Association Volunteer Honor Roll, February 2004
- MIT Alumni Association Lobdell Award, 1999
- Boston Museum of Science Gold Pin for 1000 hours of Volunteer Service, April 1999
- MIT Alumni Association Presidential Citation Award (now known as Great Dome), 1997, Member of Alumni Online Communications Committee

Patents and Patent Publications

- US Patent #7,975,296, L. Apfelbaum, H. Houh, T. Mayberry and G. Friedman, "Automated security threat testing of web pages," July 5, 2011
- US Patent #7,877,736, H. Houh and J. N. Stern, "Computer language interpretation and optimization for server testing," January 25, 2011
- US Patent #7,801,910, H. Houh and J. N. Stern, "Method and apparatus for timed tagging of media content," September 21, 2010
- US Patent #7,590,542, D. C. Williams, W. C. Hand, H. Houh, A. R. Seeley, "Method of Generating Test Scripts Using a Voice-Capable Markup Language," September 15, 2009
- US Patent #6,967,963, H. H. Houh, P. Anderson, C. Gadda, "Telecommunication method for ensuring on-time delivery of packets containing time-sensitive data," November 22, 2005.
- US Patent #5,144,375, M. C. Gabriel, H. H. Houh, N. A. Whitaker, "Sagnac Optical Logic Gate," September 1, 1992. Also European Patent # EP0456422, July 23, 1997, German Patent #DE69126913, August 28, 1997
- US Patent Application Publication No. 20020015387, "Voice Traffic Packet Capture and Analysis Tool for a Data Network"
- US Patent Application Publication No. 20020016708, "Method and Apparatus for Utilizing a Network Processor as Part of a Test System"
- US Patent Application Publication No. 20020016937, "Method and Apparatus for Utilizing a Network Processor as Part of a Test System"
- US Patent Application Publication No. 20070106646, "User-directed navigation of multimedia search results"
- US Patent Application Publication No. 20070106660, "Method and apparatus for using confidence scores of enhanced metadata in search-driven media applications"
- US Patent Application Publication No. 20070106685, "Method and apparatus for updating speech recognition databases and reindexing audio and video content using the same"
- US Patent Application Publication No. 20070106693, "Methods and apparatus for providing virtual media channels based on media search"
- US Patent Application Publication No. 20070106760, "Methods and apparatus for dynamic presentation of advertising, factual, and informational content using enhanced metadata in search-driven media applications"
- US Patent Application Publication No. 20070118873, "Methods and apparatus for merging media content"
- US Patent Application Publication No. 20090222442, "User-directed navigation of multimedia search results"
- US Patent Application 11/395,732, "Search snippet creation for audio and video data"

- US Patent Application 11/774,931, "Methods and apparatus for managing a social networking web site"
- US Patent Application 11/774,947, "Methods and apparatus for organizing media files"
- US Patent Application 11/774,956, "Methods and apparatus for managing an online event"
- US Provisional Patent Application 61/086,909, "Measuring and ranking relationship activity"
- US Provisional Patent Application 61/086,914, "Detecting media object commonality"
- US Provisional Patent Application 61/086,904, "Message categorization based on message characteristics"
- US Provisional Patent Application 61/086,905, "Photo tagging to request action"

Trials and Depositions

- Case No. 1:06CV682 (CMH/BRP), Verizon vs. Vonage, US District Court for the Eastern District of Virginia, was deposed as an expert witness and testified at trial.
- Case No. 1:08CV157 (CMH/TRJ), Verizon vs. Cox, US District Court for the Eastern District of Virginia, was deposed as an expert witness and testified at trial.
- Case No. 5:09-cv-476, Two-Way Media vs. AT&T, US District Court for the Western District of Texas, filed expert report, testified at trial
- Case No. 2:10-cv-248 (RAJ/FBS), ActiveVideo Networks vs. Verizon, US District Court for the Eastern District of Virginia, filed expert report and was deposed as an expert witness
- Case No. 1:11-cv-00880-TSE-JFA, Bear Creek Technologies, Inc. vs. Verizon Services Corp., et al, US District Court for the Eastern District of Virginia, was deposed as an expert witness
- Case No. 3:10-CV-298-BBC, AlmondNet, Inc. vs. Microsoft Corp., US District Court for the Western District of Wisconsin, filed expert report
- Case No. 6:10-cv-00597, Guardian Media Technologies, Ltd. Vs. AT&T Operations, Inc. et al., US District Court for the Eastern District of Texas, Tyler Division, filed expert report
- Case No. ESCV2010-02282C, The Octopus Solution LLC v. Gary Brown et al., Essex, MA Superior Court, testified at trial
- Investigation No. 337-TA-882, In the matter of Certain digital media devices, including televisions, Blu-ray disc players, home theater systems, tablets and mobile phones, components thereof and associated software, U.S. International Trade Commission, filed expert reports, was deposed and testified at hearing
- Case No. 8:12-cv-122-LES-TDT, Prism Technologies LLC v. AT&T Mobility LLC, US District Court for the District of Nebraska, filed expert report, was deposed and testified at trial

Publications

- "IP switching: server driven flow classification," H. H. Houh, Proceedings of the Washington University Workshop on Integration of IP and ATM, November 1996.
- "Aurora at MIT," D. D. Clark, H. H. Houh, and D. L. Tennenhouse, Editors, MIT Laboratory for Computer Science Technical Report 673, December 1995.
- "ViewStation Applications: Implications for Network Traffic," C. J. Lindblad, D. Wetherall, W. Stasior, J. F. Adam, H. H. Houh, M. Ismert, D. Bacher, B. Phillips, and D. L. Tennenhouse, IEEE Journal of Selected Areas in Communications, 1995.

- "The VuNet Desk Area Network: Architecture, Implementation, and Experience", H. H. Houh, J. F. Adam, M. Ismert, C. J. Lindblad, and D. L. Tennenhouse, *IEEE Journal of Selected Areas in Communications*, 13 (4), May, 1995.
- "Reducing the Complexity of ATM Host Interfaces", H. H. Houh and D. L. Tennenhouse, *Hot Interconnects II Symposium Proceedings*, Stanford, August 11-12, 1994.
- "Media-intensive data communications in a 'desk-area' network," J. F. Adam, H. H. Houh, M. Ismert, and D. L. Tennenhouse, *IEEE Communications*, August 1994.
- "ViewStation Applications: Intelligent Video Processing Over A Broadband Local Area Network," C. J. Lindblad, D. J. Wetherall, W. Stasior, B. Phillips, D. Bacher, J. Adam, H. Houh, M. Ismert, and D. L. Tennenhouse, *Proceedings of the 1994 USENIX Symposium on High-Speed Networking*, Oakland, CA, August 1994.
- "The Media Gateway: Live Video on the World Wide Web," H. H. Houh, C. J. Lindblad, J. Soo, D. L. Tennenhouse, and D. J. Wetherall, *Workshop at the 1994 World Wide Web Conference*, Geneva, Switzerland, May 1994.
- "Active Pages: Intelligent Nodes on the World Wide Web ," H. H. Houh, C. J. Lindblad, and D. J. Wetherall, *Proceedings of the 1994 World Wide Web Conference*, Geneva, Switzerland, May 1994.
- "Wavelength Division vs. Code Division Access Methods for Optical Networks," H. H. Houh, *Area Exam Paper*, May 1993.
- "Experience with the VuNet: A Network Architecture for a Distributed Multimedia System," J. F. Adam, H. H. Houh, D. L. Tennenhouse, *Proceedings of the 18th Conference on Local Computer Networks*, pp. 70-76, September 1993
- "The VudBoard: A Simple DMA Interface," H. H. Houh, *Proceedings of the 4th Gigabit Minijam*, January 1994.
- "A Software-Oriented Approach to the Design of Media Processing Environments," D. L. Tennenhouse, J. Adam, D. Carver, H. Houh, M. Ismert, C. Lindblad, W. Stasior, D. Weatherall, D. Bacher, and T. Chang., submitted to the *International Conference on Multimedia Computing and Systems*, May 1994.
- "A Network Architecture for Distributed Multimedia Systems," J. F. Adam, H. H. Houh, M. Ismert, and D. L. Tennenhouse, submitted to the *International Conference on Multimedia Computing and Systems*, May 1994.
- "The Viewstation Collected Papers," D. L. Tennenhouse, J. Adam, C. Compton, A. Duda, D. Gifford, H. Houh, M. Ismert, C. Lindblad, W. Stasior, R. Weiss, D. Wetherall, D. Bacher, D. Carver, and T. Chang, *MIT Laboratory for Computer Science Technical Report*, MIT/LCS/TR-590, November 1993.
- "A System's Perspective of the Sagnac Fiber Logic Gates and Their Possible Applications," A. Huang, N. Whitaker, C. Gabriel, H. Avramopoulos, P. M. W. French, H. H. Houh, and I. Chuang, *Applied Optics*, September 10, 1994
- "Complete Switching in a Three-Terminal Sagnac Switch," H. Avramopoulos, P. M. W. French, M. C. Gabriel, H. H. Houh, N. A. Whitaker, T. Morse, *IEEE Phot. Tech. Lett.* **3** (3), 235
- "Complete Switching in a Three-Terminal Sagnac Switch," H. Avramopoulos, P. M. W. French, M. C. Gabriel, H. H. Houh, N. A. Whitaker, *IEEE/LEOS Annual Meeting*, Paper PDP-13, November 1990
- "All-optical phase-locked oscillator," N. A. Whitaker, Jr., H. H. Houh, H. Avramopoulos, T. F. Morse, *IEEE/LEOS Annual Meeting*, Paper ELT2.4/MOO3, November 1990

- "Passive modelocking of an all-fiber erbium laser," H. Avramopoulos, H. H. Houh, N. A. Whitaker, M. C. Gabriel, T. F. Morse, IEEE/LEOS Conference on Optical Amplifiers and their Applications, Paper PDP-8, August 1990
- "Transverse modes, waveguide dispersion, and 30ps recovery in submicron GaAs/AlAs microresonators," J. L. Jewell, S. L. McCall, A. Scherer, H. H. Houh, N. A. Whitaker, A. C. Gossard, and J. H. English, Appl. Phys. Lett. **55** (1), July 3, 1989

Leadership, Activities and Interests

- Leadership
 - Discovery Museums (Acton, MA)
 - Science and Technology Advisory Council, 2012 - present
 - MIT Alumni Association Board of Directors
 - K-12 STEM Initiatives Co-chair, 2013 - present
 - Awards Committee Chair, 2012 - present
 - Awards Committee, 3 year term, 2011 - 2014
 - Vice President, 2 year term, 2004 - 2006
 - Board Member, 2 year term, 1997 - 1999
 - MIT Club of Boston
 - Board of Directors, 2006 - present
 - K-12 Initiatives Chair, 2009 - 2012
 - VP of Communications, MIT Club of Boston, 2003 - 2006
 - Past-President, MIT Club of Boston, 2002 - 2003
 - President, MIT Club of Boston, 2001 - 2002
 - President-Elect, MIT Club of Boston, 2000 - 2001
 - VP of Programs, MIT Club of Boston, 1999 - 2000
 - Activities Super-Chair, MIT Club of Boston, 1998 - 1999
 - MIT Enterprise Forum of Cambridge, Inc.
 - Past Chair, 2009 – 2011
 - In-NOW-vation Co-chair, 2010
 - Chair, 2007 - 2009
 - Vice Chair, 2005 - 2007
 - Executive Board Member, 2002 - present
 - Winter Workshop Co-Chair, February 2007 - conceived idea for conference, which sold-out and produced largest attendance numbers in recent memory
 - Spring Workshop Co-Chair, Spring 2004
 - Membership Committee Chair, Fall 2003 - 2006
 - 25th Anniversary Dinner Chair, Fall 2003
 - As Membership Chair and Board Member, started Special Interest Groups in 2004; a SIG won the MIT Presidential Citation award, the MIT Alumni Association's highest award for organizations, in 2006
 - Estabrook Elementary School PTA
 - Advisory committee to the superintendent on PCB issue, 2010-2011
 - 4th Grade after-school science program co-organizer, 2010-2012
 - 4th and 5th Grade before-school Math Olympiad co-organizer, 2009-2013
 - 5th Grade BBQ and Yearbook Committee, 2011, 2013
 - Family Math Night volunteer, 2008-2012

- Tau Beta Pi National Engineering Honor Society
 - Advisor, MA B Chapter at MIT, 2003 - present
 - District Director (National Officer), Tau Beta Pi, New England Area, 1991 - 2003
 - President, MA B Chapter at MIT, Fall 1988 - Spring 1989
 - Laureate award, 1989
- MIT Class of 1989
 - Secretary, consecutive 5 year terms, 1989 - present
 - 20-year Reunion Committee and Gift Committee, 2009
 - 15-year Reunion Committee and Gift Committee, 2004
 - 10-year Reunion Committee and Gift Committee, 1999
 - 5-year Reunion Committee, 1994
 - Interim Treasurer, 1993 - 1994
 - Instituted annual senior class career fair, now entering eleventh year, now raising over \$100,000 annually for senior class activities, Fall 1988
- Strong, consistent record of leadership dating to high school
- Acting
 - '21' (Sony Pictures), credited as "Chinatown Dealer," 2007, Kevin Spacey's movie about the MIT Blackjack Team inspired by "Bringing Down the House" by Ben Mezrich, opened nationwide on March 28, 2008. 21 was the number one movie in US for two weeks and number one globally for one week. 21 also topped the DVD sales, Blu-ray sales and DVD rental charts.
 - Spring Lake Theater Company, first New York-area off-broadway production of "A Chorus Line," played role of Mark, Summer 1990
- Former member of the MIT Blackjack team
- Producer for 10,000 Maniacs' 2013 album "Music from the Motion Picture"
- Executive Producer for 10,000 Maniacs' 2014 album "Twice Told Tales"
- Violist, violist, harpist, guitarist, singer, actor: played in many amateur/semi-professional groups including Merrimack Valley Philharmonic, Longwood Symphony, MIT Symphony, MIT Summer Philharmonic Orchestra and Somerville Community Chorus

EXHIBIT B TO DECLARATION

List of Materials Considered by Henry Houh

1. All documents cited within my reports
2. U.S. Patent No. 6,496,692
3. U.S. Patent No. 7,257,395
4. U.S. Patent No. 7,295,864
5. U.S. Patent No. 7,319,866
6. Prosecution History of U.S. Patent No. 6,496,692
7. Prosecution History of U.S. Patent No. 7,257,395
8. Prosecution History of U.S. Patent No. 7,295,864
9. Prosecution History of U.S. Patent No. 7,319,866
10. Prosecution History for U.S. Patent Application 09,518,846
11. U.S. Provisional Application No. 60/169,158
12. Solocron's Infringement Contentions
13. Defendants' Invalidity Contentions
14. October 27, 2014 Declaration of Chris Butler and Exhibits Thereto
15. Jukeboksi Certified Translations
16. Nokia 9110 User Manual
17. Nokia 9110 Browser Style Guide
18. U.S. Patent No. 6,292,668 (Alanara)
19. WO 1998/025397 (Rizet)
20. MIDI Specification
21. Standard MIDI File Specification
22. General MIDI Specification
23. "Yamaha Sound Generator LSI 'YMU757,'" Yamaha News Release

24. Japanese Unexamined Application No. H11-242490 and Certification Thereof
25. U.S. Patent No. 5,481,599 (McCallister)
26. U.S. Patent No. 6,247,130 (Fritsch)
27. U.S. Patent No. 6,366,791 (Lin)
28. U.S. Patent No. 6,492,761 (Perez)
29. U.S. Patent No. 7,065,342 (Rolf)
30. U.S. Patent No. 7,088,990 (Isomursu)
31. U.S. Patent No. 7,149,208 (Mattaway)
32. U.S. Patent No. 7,904,528 (Zilliacus)
33. U.S. Patent No. 6,018,654 (Valentine)
34. Yamaha YMU757 Technical Manual, February 2000
35. Certified translation of Chapters 2-3 of “Nikkei Electronics” 1999.11.15
36. Yamaha YMU757 Press Release, October 12, 1999
37. Declaration of Erin Flaucher re Nokia 9110 with Exhibits
38. 9110 Nokia.com web page archived May 8, 1999 for “Frequently Asked Questions”
39. Nokia 9110 CD Listing Printout
40. 9110 PC Suite PC Suite for Nokia 9110 Communicator User’s Guide
41. Quick Guide for the WAV Converter for the Nokia 9110 Communicator, 10/22/1999
42. Nokia 9110 Startup Slide Show
43. Declaration of Internet Archive re Nokia Websites
44. Declaration of Jari Valli
45. Solocron’s Opening Claim Construction Brief from *Solocron v. Cellco Partnership et al.* (Case No. 2-13-cv-1059) (E.D. Tex.)
46. Local Patent Rule 4-3 Statement filed in *Solocron v. Cellco Partnership et al.* (Case No. 2-13-cv-1059) (E.D. Tex.)
47. SDMI Portable Device Specification, Part I (July 8, 1988) and RIAA Press Release

48. Nokia Announces the Nokia WAP Browser (June 30, 1999)
49. The Nokia 9110i Communicator with WAP (February 23, 2000)
50. The Nokia 9110i Communicator offers WAP services to the large community of knowledge workers (February 23, 2000)
51. U.S. Provisional Application Ser. No. 60/167,179 (Rolf Provisional)
52. Email with Nikkei Publisher
53. U.S. Patent No. 6,661,784 (Nykanen)
54. Any other materials referenced in my declaration, but not cited above
55. All exhibits cited in IPR petitions for the '692, '395, '866, and '864 patents, for which I submitted a declaration.