

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY GROUP CORPORATION, SONY CORPORATION, SONY
CORPORATION OF AMERICA, AND SONY ELECTRONICS, INC.,
Petitioner

v.

INMUSIC BRANDS, INC.,
Patent Owner.

IPR2023-00294
Patent 7,567,498 B2

DECLARATION OF IVAN ZATKOVICH

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I, Ivan Zatkovich, hereby declare as follows:

1 INTRODUCTION

1.1 Engagement

1. I have been retained by Thompson Coburn LLP (“TC”) to give my opinion concerning the validity of claims 1-6 of U.S. Patent. No. 7,567,498 B2 (“the ’498 patent”). The ’498 patent, granted to James Mazur *et al.*, is titled “Phonographic Turntable with Built-In Audio to USB or Firewire Device” and was filed June 8, 2004. This work is adjunct to TC’s services as attorneys on behalf of its client inMusic Brands, Inc., the assignee of the ’498 patent. I am being compensated for my time at the rate of \$575 per hour.

2. I have been asked to provide my technical review, analysis, insights, and opinions regarding the petition for *inter partes* review of claims 1-6 of the ’498 patent.

3. In this declaration, I will cite the specification of the ’498 patent and any other patent or patent publication using the following format: (’498 1:1-10). This citation points to the specification of the ’498 patent at column 1, lines 1-10. I will also cite other documents, such as the Petition in this matter, using the following format: (Petition, p. 29). This citation points to the 29th page of the document in PDF form as attached and does not necessarily match the document’s original pagination.

4. The statements made herein are based on my own knowledge and opinions.

1.2 Background and Qualifications

5. I received a Bachelor's degree in Computer Science, with a minor in Electrical Engineering Digital Circuit Design, from the University of Pittsburgh, and completed a Master's thesis in Computer Networks in 1980.

6. I have over 30 years of experience in computer science, including telecommunications, eCommerce, cybersecurity, electronic publishing systems, user & device authentication, software licensing, media distribution, Digital Rights Management, software copyright, and software copy protection including per-device, per-seat, and per-use licensing systems.

7. I have been a Principal Consultant with eComp Consultants for over twenty years. eComp Consultants provides professional consulting services relating to computer and technical matters in a wide range of industries including embedded internet systems, cellular telephony, and cloud-based services. Such consulting services include working with clients on specific information technology projects, process improvement, project management, and other technology issues. eComp Consultants also provides professional expert witness services.

8. At eComp Consultants, I have been frequently called upon to provide my expert opinion on matters concerning patent disputes. I have been qualified as a technical expert in over 60 matters including software licensing systems (per-seat, per-device, per-CPU, and per-company licensing systems), user and device authentication, digital rights management, and media distribution licensing, including in areas that relate to the technology described in the '498 Patent. A complete list of the cases in which I have testified at least in the last four years is included with my CV in Exhibit 1.

9. In my professional career, I have worked for companies such as Digital Equipment Corp. and GTE Data Services (now Verizon) on projects designing, developing, and integrating software and hardware for major computer and telecommunications systems. I have also worked for Eva-Tone, Inc. on projects designing and developing eCommerce, content management, and web publishing systems.

10. In general, I have over 30 years' experience in media and communications technology including Mobile and wireless device applications, audio and video media players, Media streaming services, encoding media channels in digital formats including USB and Bluetooth protocols.

11. The following is a summary of related professional experience I have had in this field:

Digital Equipment Corporation – Video drivers

- Developed Magnetic and Optical Video disk players and media drivers – designed and implemented video disk interfaces, Digitized audio, and text to speech devices.

GTE Verizon – Wireless communication, media streaming

- Developed Digital Voice and multimedia Communications, streaming media with high speed ISDN & FDDI , and video conferencing using H.320 standards over T1 / ISDN.

Utility Partners - Wireless Networking

- Wireless communications and PDA applications – Signal processing, Signal Strength measurement Multi-channel filtering.

Evatone – Media distribution, playback

- Director of EBusiness Department to Deliver Audio, Video and other Media distribution and eCommerce solutions.
- Implemented online video streaming, and music purchase systems (sample, stream and/or download).

Developed Warner Brothers online music and streaming library

12. The following is a summary of related case experience I have had in this field:

Black Hills v. Samsung, Toshiba, LG, Panasonic - Patent Litigation - ITC
Testifying Expert on Media Players, Playlist management and execution.

Performed media transmission and control testing using a combination of media devices (Home Theater systems, Mobile phones, tablets, Smart TVs) and media players (Google Play, Pandora, Spotify, Samsung Music Hub, Amazon Cloud).

Black Hills v Sonos – Patent Litigation, IPRs

Testifying expert on the encoding, transmission, control and playback of multiple audio streams. Comparison of audio transmission through USB, Bluetooth, and mesh networks. Including synchronization and rebroadcast of digital audio to/from multiple devices.

Microchip v. Aptiv, Delphi – Patent Litigation

Testifying expert communication with Automobile A/V Head Units for Apple Car Play including FIFO buffer arbitration, SD & MMC embedded memory devices, and USB command and control interface.

Zamora v. lastfm, CBS, Pandora, et.al. – Patent Litigation

Testifying Expert for browser based and desktop based audio players, playlist control, and streaming.

Bear Creek Technologies v. Verizon et.al. – Patent Litigation

Testifying expert on digital media distribution, video, television, and voice transmission and routing, FiOS and VoIP standards (RTP, SIP, ONT, G.711, H323)

13. By virtue of the above experience, I have gained a detailed understanding of the technology that is at issue in this proceeding. My experience with electrical device and circuit design, audio devices, and media players is directly relevant to the subject matter of the '498 patent.

14. I thus believe I am qualified to provide opinions about how one of ordinary skill in the art in June 2004 would have interpreted and understood the '498 patent and the art relied upon by the Petitioner as discussed below.

1.3 Documents Considered in Formulating My Opinion

15. This declaration represents only the opinions I have formed to date. I may consider additional documents as they become available or other documents that are necessary to form my opinions. I reserve the right to revise, supplement, or amend my opinions based on new information and on my continuing analysis.

16. I considered the following documents when formulating my opinion. These documents are true and accurate copies of what they appear to be. I understand that I may rely upon these materials to respond to arguments raised by the petitioners.

Reference or Declaration	Date	Exhibit No.
Petition for <i>Inter Partes</i> Review (“Petition”)	Dec. 1, 2022	Paper 2
Institution Decision (“DI”)	July 25, 2023	Paper 10
U.S. Patent No. 7,567,498 (“the ’498 patent”)	June 8, 2004	Ex. 1001
Declaration of Dr. Todd K. Moon (“Moon Dec.”)	Nov. 7, 2022	Ex. 1002
EP 0 999 553 A1 (“Cortellesi”)	May 10, 2000	Ex. 1004
U.S. Publication No. 2004/0089795 A1 (“Spencer”)	May 13, 2004	Ex. 1005
U.S. Publication No. 2003/0206506 A1 (“Cohen”)	Nov. 6, 2003	Ex. 1006
U.S. Publication No. 2003/0131715 A1 (“Georges”)	July 17, 2003	Ex. 1013
“The Year’s Best Turntable – Audio Note TT1” What HiFi? Magazine (“TT1”)	2003	Ex. 2005

Reference or Declaration	Date	Exhibit No.
https://www.audionote.co.uk/_files/ugd/3e7c3b_5880b72e4038426d9c70895fb3842b02.pdf (last accessed Nov. 3, 2023)		
The Complete MIDI 1.0 Detailed Specification (“MIDI Spec”)	1996	Ex. 2006
Deposition of Dr. Todd K. Moon (“Moon Dep.”)	Oct. 24, 2023	Ex. 2007
LinkedIn Profiles of Alan Flum, Mark Demouy, and Darrin Young	2023	Ex. 2008
Manual for EZ-USB FX2LP USB Microcontroller High-Speed USB Peripheral Controller, <i>available at</i> https://www.infineon.com/dgdl/Infineon-CY7C68013A_CY7C68014A_CY7C68015A_CY7C68016A_EZ-USB_FX2LP_USB_Microcontroller_High-Speed_USB_Peripheral_Controller-DataSheet-v31_00-EN.pdf?fileId=8ac78c8c7d0d8da4017d0ec9f7974252 (accessed Nov. 3, 2023).	2021	Ex. 2009
Image of CY3689 EZ-USB FX2LP Discovery Kit, <i>available at</i> https://www.infineon.com/export/sites/default/_images/product/evaluation-boards/CY3689_0.png_1892450672.png (accessed Nov. 3, 2023).	2023	Ex. 2010
Excerpts from the U.S. Music Revenue Database, Recording Industry Association of America, <i>available at</i> https://www.riaa.com/u-s-sales-database (accessed Nov. 6, 2023).	2023	Ex. 2011
J.D. Biersdorfer, <i>Convert Stacks of Wax into Digital Music Files</i> , New York Times (Oct. 7, 2004).	Oct. 7, 2004	Ex. 2012

2 INSTITUTED GROUNDS

17. I understand that in IPR2023-00294, the Board instituted *inter partes* review of claims 1-6 of the '498 patent on the following four grounds:

Ground	Claims	35 U.S.C. §	Primary Reference
1	1, 2, 4-6	103	Cortellesi
2	3	103	Cortellesi, Georges
3	1, 2, 4-6	103	Spencer, Cohen
4	3	103	Spencer, Cohen, Georges

3 OVERVIEW OF THE LAW USED FOR THIS DECLARATION

3.1 The Person of Ordinary Skill in the Art

18. I have been asked to consider the level of ordinary skill in the art that someone would have had at the time of invention, which I assumed without comment is no later than June 8, 2004. At that time, I was (and am) sufficiently experienced to understand the relevant level of ordinary skill, which takes into consideration:

- The educational level of the inventor;
- The type of problems encountered in the art;
- Prior art solutions to those problems;
- Rapidity with which innovations are made;
- Sophistication of the technology; and
- Educational level of active workers in the field.

19. Based on the technologies disclosed in the '498 patent and the considerations listed above, a person having ordinary skill in the art ("POSITA")

would have had technical knowledge (whether through a college degree or otherwise), along with practical experience and market awareness relating to consumer audio products including turntables.

20. This reflects the area in which the '498 patent operates: practical playing of music or speech from LP records by consumers into a digital computer or other digital device (*e.g.*, the Apple iPod and other portable MP3 audio players available before 2004) for storing and subsequent playing that music or speech from the digital device. I note that the inventors of the '498 patent all worked at Stanton Magnetics, Inc., a well-known player in the consumer audio products industry at the time of the invention.

21. A POSITA would have been aware of the rapid pace of innovation in consumer electronics and the need for consumer products to be inexpensive and reliable, and thus would have avoided attempting to apply technology packages that were complex or not directly applicable. A POSITA would have also been aware of the state of the art and the market dynamics regarding turntables, which are detailed in the next section.

22. I understand that the educational level of the inventors is sometimes considered, and the educational level of the inventors of the '498 patent confirms my opinion as to the level of skill above. Some of the inventors had degrees in Electrical Engineering or other engineering experience, such as Alan Flum and

Mark Demouy, and others with experience in the music and audio industries but without a technical degree, such as Darrin Young. *See* Ex. 2008 (showing Mr. Young had a degree in Psychology).

23. Throughout my declaration, even if I proffer my analysis in the present tense, I am always making my determinations based on what a POSITA would have known at the time of the invention. Additionally, in Sections 3-10 of this declaration, even if I discuss something stating “I,” I am referring to a POSITA’s understanding at the time of the invention, which is no later than June 8, 2004.

3.2 Overview of the State of the Art and Background on Turntables

24. At the time of the invention of the ’498 patent, sales of LPs made up less than 1% of the market. *See* Ex. 2011 (data from the RIAA, showing music revenues and sales by format). At that point in time, CDs dominated the commercial market. *Id.*

25. Further, the next generation of downloadable/digital music was becoming more popular. While downloadable music (such as MP3s) made up less than 10% of the market by 2004 (*id.*), there was a much larger “underground” scene for digital music through the Internet. Internet-savvy individuals were widely downloading music through different online services such as Napster, Limewire, and BitTorrent.

26. In sum at the time of the invention record players (or turntables) were a niche product, as demonstrated by the very low market share of LPs at the time.

Id.

27. That said, certain listeners in that era liked the sound of vinyl better than CDs or digital or had a nostalgic feeling for the pops, crackles and hisses of vinyl, although that made up a very small percentage of the population in 2004.

28. The market for vinyl has continued to evolve, and in recent years vinyl has once again overtaken CDs in sales. *Id.* But, for purposes of the relevant time period, it should be understood that vinyl was seen as an outdated, inferior product as compared to CDs and digital music. Indeed, that view is largely correct. In terms of objective measures, such as distortion, noise, frequency response and dynamic range, digital is superior.

29. As a result, the market has split with those committed to audio fidelity listing to digital “Hi-Fi” music, while others who prefer more “organic” sounds have instead begun to return to vinyl.

30. While turntables had largely fallen out of favor with at-home consumers of music in the early 2000s, they remained in use with disc jockeys (“DJs”) who practiced “turntablism,” i.e., the art of manipulating sounds and creating new music, sound effects, mixes and other creative sounds and beats.

31. Turntablists often used two or more turntables and a cross fader-equipped DJ mixer, which in turn is plugged into additional audio equipment to create dynamic audio experiences for listeners.

32. Turntablists manipulate records by moving the records with their hands and by touching or moving the platter of the turntable or record to stop, slow down, or speed up the record. DJs can often move the turntable platter back and forth, creating the popular “scratching” effect.

33. While the references relied on by Petitioners are directed to inventions utilized by DJs, the '498 patent is not directed to turntablism. It makes no reference to such concepts or DJs.

34. Instead, the '498 patent is directed to allowing consumers with large vinyl record collections to transfer the music or speech on those records to a computer through USB or firewire, given the transition from vinyl to CDs to digital music that was occurring in the early 2000s. Ex. 2011.

35. Prior to the invention, a number of references disclosed using conventional turntables and other stand-alone external equipment to digitize music on LP albums, such as the arrangement disclosed in the New York Times article cited by Sony. *See, e.g.*, Ex. 1007 at 1-2 (disclosing the use of separate pre-amplifiers, which may include an “audio-to-digital converter,” to connect the record player to the computer); *see also* Ex. 2012 (an article, after the present

patent's filing date but in 2004, describing an "Instant music box" device that connected a conventional turntable to a computer, potentially using a pre-amplifier).

36. No references or prior art, however, disclosed the turntable as recited in the present patent. Indeed, the examiner of the '498 patent indicated as much in the Notice of Allowance, stating "[a]lthough many prior art of record disclose converting analog audio signal reproduced from the record into a digital audio signal . . . none of [] them teach having an analog to digital converter and a controller responsive to the analog to digital converter [] built inside a turntable." Ex. 1007 at 197.

37. Turntablism is not just about engineering and music quality. It is an art in itself, and DJs are part of the show, putting on a performance.

38. The references cited by Petitioners, such as Cortellesi, Spencer and Cohen, discuss using turntables (or turntable-like devices) as controllers to control digital music stored on a computer. That way, a DJ can appear to be manipulating and scratching records as was traditionally done with common turntables, but in reality all of the music and musical effects are happening digitally.

39. Disc jockeys set up their equipment in the DJ booth or table. Their equipment must be portable in the sense that they can bring it to different venues, each of which may have a different level of technology present. But there is no

goal for DJs or in turntablism to minimize equipment to the fullest extent that technology allows.

40. For example, one can simply play music from an iPhone, but a show involving plugging an iPhone into a speaker setup is hardly engrossing to the show attendees. Consequently, DJs seek to put on a show, manipulating turntable-like devices, even where such is not necessary from a purely technological perspective.

41. As discussed below, the turntables discussed in the cited references are simply used as a controller for controlling and manipulating digital music stored elsewhere.

42. Because Dr. Moon misreads what the prior art discloses, and his view of obviousness in the Petition is predicated on a misunderstanding of the industry, he has failed to show any claims of the '498 patent are obvious.

3.3 Obviousness

43. I have been instructed by counsel on the law regarding obviousness.

44. I understand that a patent claim is invalid if the claims would have been obvious to a POSITA at the time of the invention. I understand that the obviousness inquiry should not be done in hindsight but rather from the perspective of a POSITA as of the time of the invention.

45. I understand that to obtain a patent, the claims must have, as of the time of the invention, been nonobvious in view of the prior art.

46. I understand that a claim is obvious when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSITA at the time of the invention.

47. I understand that certain objective indicia can be important evidence regarding whether a patent is obvious. Such indicia include: industry acceptance; commercial success of products covered by the patent claims; 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 as compared to the closest prior art; praise of the invention by the infringer or others in the field; taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at making the invention; and the patentee proceeded contrary to the accepted wisdom of the prior art.

48. I understand that obviousness can be established by combining multiple prior art references to meet each and every claim element. I also understand that to support a combination of multiple prior art references, there must be a rationale explaining why a skilled artisan would have combined the references in the manner claimed, accompanied by a reasonable expectation of success of achieving what is claimed, and how the proposed combination meets each and every claim element of the claim in question. I also understand that a

proposed combination of references can be susceptible to hindsight bias. When it appears hindsight bias is being used, I understand the modification or combination is not considered obvious.

49. I understand that exemplary rationales that may support a conclusion of obviousness include: combining prior art elements according to known methods to yield predictable results; simple substitutions of one known element for another to obtain predictable results; using a known technique to improve similar devices in the same way; applying a known technique to a known device ready for improvement to yield predictable results; choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art teachings to arrive at the claimed invention.

50. I understand that if the proposed combination results in one or more of the references being unsatisfactory for its intended purpose, a POSITA would not have had a motivation to combine or modify the reference(s).

51. I understand that if the proposed combination changes the principle of operation of one or more references, a POSITA would not have had a motivation to combine or modify the reference(s).

52. I understand that teaching away, *e.g.*, discouragement from making the proposed modification, is strong evidence that the references are not combinable. I also understand that a disclosure of more than one alternative does not necessarily constitute a teaching away.

53. I understand that the combination does not need to result in the most desirable embodiment, but if the proposed combination does not have a reasonable expectation of success at the time of the invention, a POSITA would not have had an adequate teaching, suggestion, or motivation to combine the references.

54. I understand that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated or physically combined into the structure of the primary reference, but whether the claimed invention is rendered obvious by the teachings of the references as a whole.

3.4 Claim Construction

55. I have been instructed by counsel on the law regarding claim construction and patent claims, and I understand that a patent may include two types of claims—independent claims and dependent claims. An independent claim stands alone and includes only the features it recites. A dependent claim can

depend from an independent claim or another dependent claim. I understand that a dependent claim includes all the features that it recites in addition to all the features recited in the claim(s) from which it depends.

56. I understand that in this *inter partes* review the claims must be given their ordinary and customary meaning to a person of ordinary skill in the art at the time of the invention, which involves considering the claims, specification, and prosecution history, as well as evidence extrinsic to the patent.

57. I understand that claim terms are given their customary and ordinary meaning as would be understood by a person of ordinary skill in the art, unless the inventor provides a special meaning for a term or there has been a disclaimer during prosecution.

58. I understand that if there are specific statements in the specification that define the invention with respect to a term, those statements are strong evidence of a definition for the term.

59. In this declaration, I have used this standard when interpreting the claim terms.

4 TECHNICAL BACKGROUND

60. The '498 patent discloses an apparatus physically including all components for playing conventional phonograph records in a conventional

manner and providing the resulting audio signal in a digital form compatible with standard computers (*cf. e.g.*, '498 patent Abstract, 1:8-11, 1:43-45, 1:43-51).

61. At the time of the invention, it was known to connect the analog audio signal from a conventional phonographic turntable to external conversion means to permit a computer to receive the audio signal in digital form ('498 1:28-30). It was also known to build into a phonographic turntable conversion means delivering a digital audio signal but only in a form not recognized by computers ('498 1:35-38).

5 SUMMARY OF THE '498 PATENT AND THE ASSERTED ART

5.1 The '498 patent

62. The '498 patent discloses a phonographic turntable which includes internally within it ('498 Abstract, 1:52-57, 2:21-23, 2:44-46):

- a rotatable platter ('498 2:10-11);
- a tonearm ('498 2:11-12);
- a phono cartridge supported by the tonearm ('498 2:12-14) which engages a conventional LP record rotating on the platter ('498 2:14-16) to generate a conventional analog electrical signal representative of the audio recording on the LP record ('498 2:16-18);
- an analog-to-digital converter which receives the conventional analog electrical signal and produces a digital output ('498 2:18-20); and
- Either:
 - a USB controller which receives the digital output of the analog-to-digital converter (2:20-21) and generates a standard USB signal ('498 2:23-24); and

- a USB jack on the cabinet of the turntable ('498 2:24-25) delivering the USB signal;
- Or:
 - a firewire controller comprising a link layer and PHY layer ('498 2:44-45) which receives the digital output of the analog-to-digital converter ('498 2:40-42) and generates a signal in firewire (IEEE 1394) format ('498 2:46-48); and
 - a firewire jack on the cabinet of the turntable ('498 2:47-48) delivering the firewire signal.

63. The resulting USB or firewire signal can be fed directly to an external computer or similar digital processing equipment ('498 2:25-27, 2:48-51).

64. The '498 patent depicts the disclosed turntable and external computer in the USB configuration in Fig. 1:

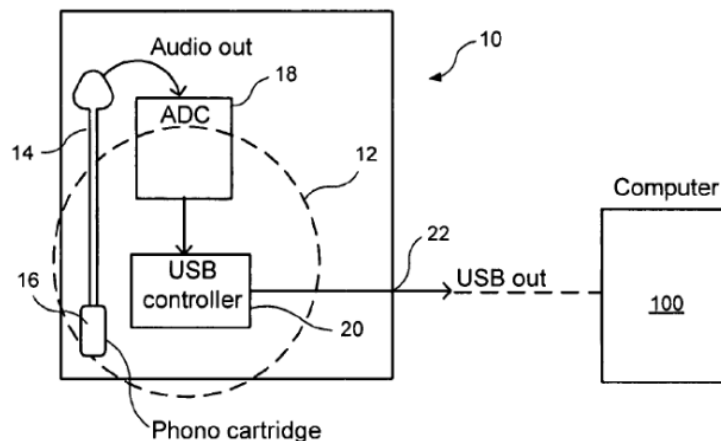


FIG. 1

65. The '498 patent depicts the disclosed turntable and external computer in the firewire configuration in Fig. 2:

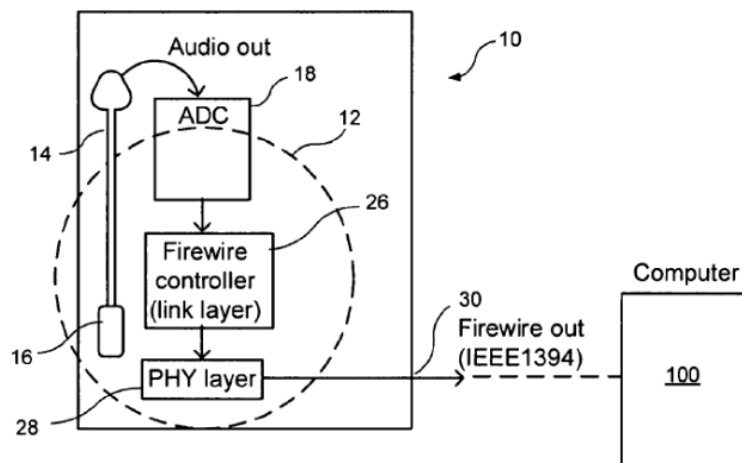


FIG. 2

66. In both configurations, all items listed above as included internally within the turntable, designated by reference number 10, are depicted as such in the figures, consistent with the '498 patent's requirement:

- “a turntable which **includes** an **internal** analog to digital converter and a controller for a standard digital format” ('498 Abstract; emphasis supplied).
- “The present invention relates to a phonographic turntable which **includes** a built-in audio conversion device, which is typically to USB, firewire, or other computer digital communication protocol, **inside the turntable**” ('498 1:8-11; emphasis supplied).
- “providing a turntable with such conventional features as a revolving platter, a pivoting tonearm and an analog phono cartridge and further providing an audio conversion device to USB, firewire or other standard computer digital communication protocol **internally within the turntable**” ('498 1:52-57; emphasis supplied).
- “Both the analog to digital converter 18 and the USB controller 20 are **within the turntable 10**” ('498 2:21-23; emphasis supplied).

- “The analog to digital converter 16, the firewire controller (link layer) 26 and the physical SHY) layer 28 are **all contained within the turntable 10**” (’498 2:43-46; emphasis supplied).

5.2 Cortellesi

67. Cortellesi discloses “a cheap, reliable, portable electronic apparatus using a dedicated hard-disk where it is possible to store digitally several pieces of music and to play them without the need of having the original musical supports or records” (Cortellesi ¶ 0002).

68. Cortellesi states “With reference to the block diagram of Figure 1, the portable apparatus for archiving, handling and listening to pieces of music according to the present invention consists essentially of a central processing unit capable of receiving and recording the desired pieces of music in digital form through a plurality of inside and outside units, and at least one playing unit capable of converting the signal from digital to analogue form in order to allow the selected pieces of music to be played/listened to” (Cortellesi ¶ 0004).

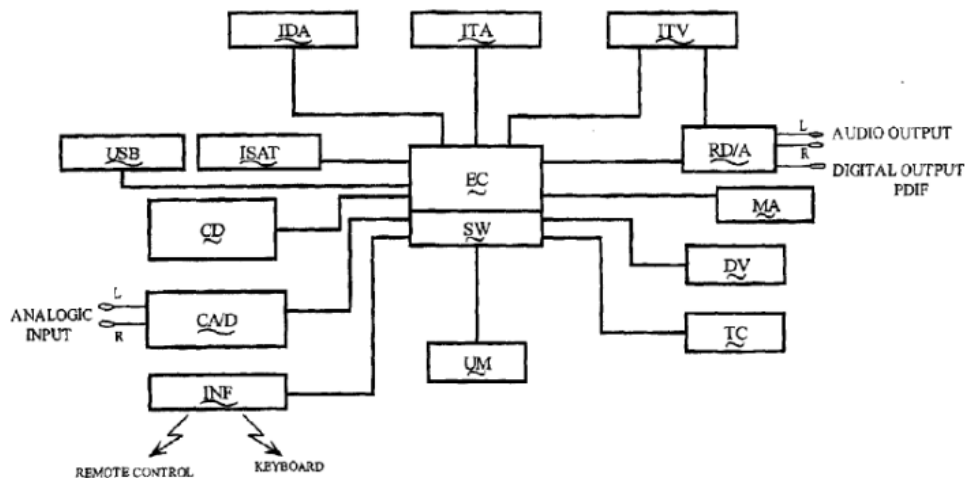


FIG. 1

69. Cortellesi ¶ 0004 proceeds to list what's included in the apparatus of the invention of Figure 1:

- A central processing unit EC
- An analog-to-digital converter CA/D
- A storage unit UM
- A playing unit RD/A
- Knobs MA and manual controls
- A display DV
- A control keyboard TC

70. Both the cited text and the figure show the disclosed “central processing unit” and “playing unit” to be electronic components, consistent with the disclosure of the invention as an “electronic apparatus” (Cortellesi ¶ 0002).

71. The item “CD” in FIG. 1 is an optional external CD player (Cortellesi 3:25-26).

72. No phonographic turntable is disclosed in Cortellesi ¶ 0004 or FIG. 1. The only mention of something phonographic in Cortellesi ¶ 0004 is the appearance of “vinyl records” among the audio analog sources (Cortellesi 2:34).

73. Cortellesi’s “playing unit” only plays digital content provided by the central processing unit (Cortellesi 2:50-54). This is consistent with the description of the invention as “using a dedicated hard-disk where it is possible to store digitally several pieces of music and to play them **without the need of having the original musical supports or records**” (Cortellesi 1:20-23; emphasis supplied).

74. Cortellesi discloses a “common record player” (Cortellesi 4:25, 4:40-41) that may be used in two configurations: (1) that a common record player may be connected to the apparatus via an analog to digital converter as an outside analogic input to the apparatus shown in Figure 1 (Cortellesi 2:33-36, 5:7-11), or (2) that a common record player may be used to rotate a “virtual disk VD” (Cortellesi 4:28), which contains a ring of metal balls (Cortellesi 4:35-37), as shown in FIG. 2.

75. Cortellesi’s disclosure of a “common record player” would be understood by a POSITA to refer to typical record players used prior to the invention of the ’498 patent. Such a common record player is depicted below in this declaration when describing the claim construction of “turntable.” A common record player would have included a rotatable platter, a tonearm with a cartridge,

and an analog out. Other types of record players would not have been considered common record players, and certainly a record player as inventively disclosed by the '498 patent with USB was not common (or in existence) prior to the '498 patent.

76. In the former configuration, the common record player is an outside unit that is connected to the apparatus via the analog to digital converter. (Cortellesi 2:33-36, 5:7-11). Because the common record player is an outside unit, the analog to digital converter and the controller are not within the turntable as required by claim 1. Dr. Moon appears to agree that the common record player is an outside unit in this configuration. *See* Ex. 1002 at 30-31 (“Cortellesi provides for generic analog inputs that could come from a variety of sources including, but not limited to, record players This allows a disk jockey to connect to outside analog sources if desired. . . . External record players might be desirable . . .”).

77. In the latter configuration, the common record player is not used to play music as the virtual disk VD does not contain any audio recording, and is sensed not with the pick-up arm of the common record player (Cortellesi 4:42) but instead with a separate “directional sensor of magnetic flux SD” (Cortellesi 4:42-46), which only provides signals carrying information about the position and speed of rotation of the virtual disk (Cortellesi 4:47-50). In short, the virtual disk VD does not provide any audio signal.

78. The virtual disk VD and sensor SD are shown in FIG. 2, which depicts a different apparatus from that of FIG. 1:

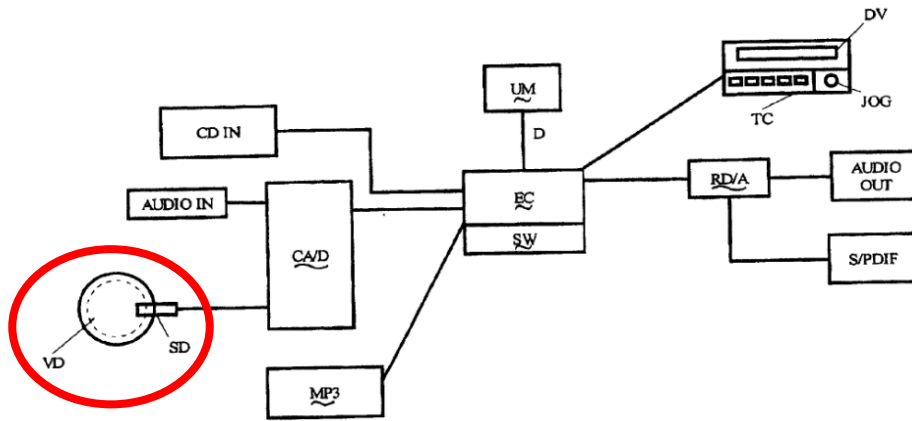


FIG. 2

79. The disclosed “common record player” is used only as a control for playback of digital content stored in Cortellesi’s electronics (Cortellesi 4:56-5:3), including “scratching” resulting from manual back and forth turning of the virtual disk by a disk jockey (Cortellesi 3:7-8).

80. Even this use of a “common record player” is optional in Cortellesi, and is an alternative to using the knobs MA of Cortellesi’s “portable electronic apparatus” that is described in FIG. 1 as being able to perform scratching (Cortellesi 3:6-8, 4:22-23).

81. Cortellesi points out the disclosed “portable electronic apparatus” is capable of “performing automatically the same operations (scratching) as those

performed today on the records placed on the turntables of the record players located in the console” (Cortellesi 1:43-46).

82. From the above, I find Cortellesi to disclose a “portable electronic apparatus” which does not include, nor is included within, a standard phonographic turntable as disclosed in ’498 patent. That is, the “common record player” described in Cortellesi and depicted in FIG. 4 is a different device from that of either of the apparatuses depicted in FIGS. 1 and 2 of Cortellesi.

83. I note that in the institution decision, the Board quoted Cortellesi as stating Figure 4 “is a top plan view of the portable apparatus provided with a record player carrying the virtual disk provided with a reading sensor.” Paper 10 at 24. This, however, was a misquote and is not found in Cortellesi. Cortellesi actually states “Fig. 4 is a top plan view of a first embodiment of the apparatus provided with a record player carrying the virtual disk provided with a reading sensor.” (Cortellesi 2:8-10). This sentence does not change my opinions expressed above. What this is describing is that FIG. 4 is a top plan view of the portion of FIG. 2 identified by the red circle below (*i.e.*, the VD and SD which are placed on a “common record player”). Any reading to indicate that FIG. 4 also includes all of the disclosures of FIG. 2 is contradicted by the rest of the disclosure of Cortellesi. Such a combination of FIGS. 2 and 4 would not be a “common record player,” as repeatedly disclosed in Cortellesi. Moreover, simply looking at FIG. 4, one can see

this interpretation is incorrect. FIG. 4 certainly does not depict all of the items of FIG. 2. The common record player of FIG. 4, for example, does not have a display (“DV”) or knob (“MA” or “JOG”), as described in FIG. 2 (or FIG. 1).

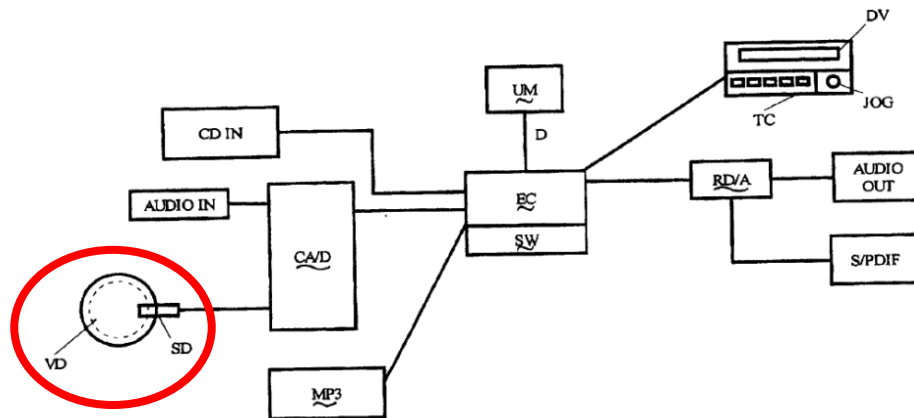


FIG. 2

5.3 Spencer

84. Spencer discloses “An apparatus including sensors that aid in the location of a stylus within the groove of a rotating record” (Spencer Abstract).

85. Spencer states “Techniques used by disk jockeys (DJs) to manipulate analog devices have become almost universal...By far, the most popular analog devices with DJs are analog record turntables capable of producing sound off of an analog vinyl record...Manipulation, however, of CD players is not accomplished as easily as with conventional analog turntables” (Spencer ¶ 0004).

86. The stated aim of Spencer is to use an analog turntable as a “control unit” or “controller unit” for manipulating playback from a CD player (Spencer ¶¶

0008, 00028). This use of the term “controller” in Spencer refers to the turntable providing information about position on a disk to control playback of an external digital music source. This is distinct from the use of that term in the ’498 patent, which refers to electronics for generating a standard USB or firewire digital audio signal.

87. To achieve its aim, Spencer discloses “tracking information may be computed from dimensional information obtained from a control unit. The dimensional information relates to the actual location of a stylus from an analog turntable within the groove of the vinyl record” (Spencer ¶ 0010).

88. To obtain that “dimension information” Spencer adds to a conventional analog turntable a “a position encoder for generating position data related to a position of the arm” feeding electronics “outputting the digital signals, wherein the position data controls the output of the digital signals” (Spencer ¶ 0013).

89. In particular, for all disclosed embodiments, Spencer discloses a turntable 100 equipped with an unconventional arm position sensor “tone arm encoder” 128 (Spencer FIGs 2, 4, 6 and ¶ 0037.), and optionally an unconventional “scanner assembly” 130 (Spencer FIG. 3A, ¶ 0041) and/or a “second scanner assembly” 140 (Spencer FIG. 4, ¶ 0053).

FIG. 2

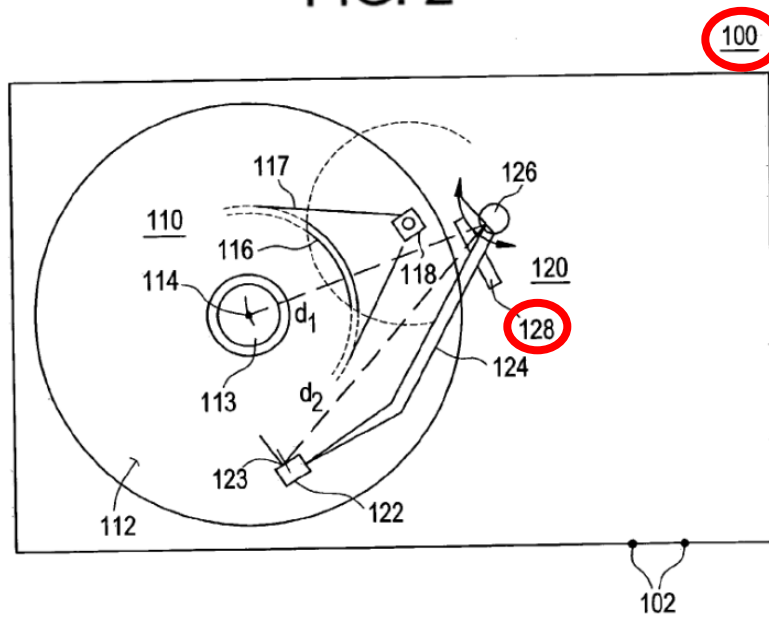


FIG. 3A

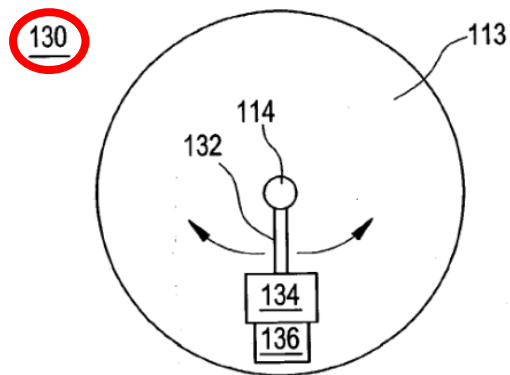


FIG. 4

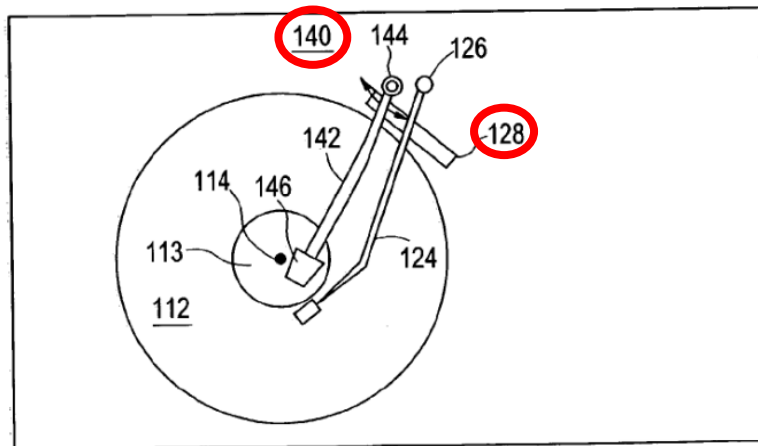
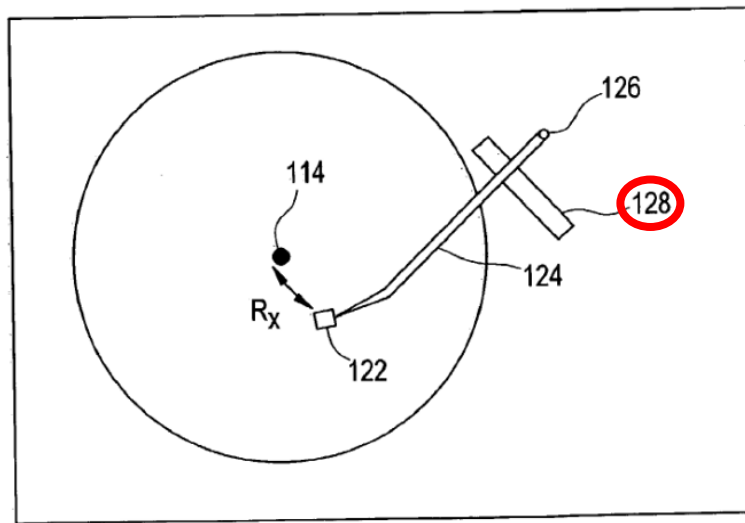


FIG. 6



90. Dr. Moon references Paragraph 30, which speaks to digitized audio signals and information useful in determining an intratrack needle position” that is communicated from controller unit 100 to the data processor unit 200. This sentence is clear that the “signals and information” are “useful in determining an intratrack needle position,” which is exactly what I described from Spencer above.

91. Spencer never describes what the “digitized audio signals” are and never references that term again. However, the rest of the reference refers to “tone arm assembly signals” (Spencer ¶¶ 0039, 00066, 0070, 0080, 0088, 0084, 0094), which may be what was intended. The specification never explicitly states that the tone arm assembly signals are “digitized audio signals,” but they could be. The reference also discloses other data, such as “label signals,” coming from optional

scanners 130 and 140. (Spencer ¶ 0051), which are analogous to the “information” disclosed in Paragraph 30.

92. Regardless, Spencer never states that the “digitized audio signals” in Paragraph 30 are representative of an audio recording that is on the LP record. And in every other instance where Spencer otherwise speaks to outputting digital audio, such digital audio is not audio from the record on the turntable, but only audio from content stored elsewhere:

- “Digital audio output port 207 on the data processor unit 200 may be coupled to corresponding ports on external output device 420 such as a speaker to output audio signals synchronized with an audio signal corresponding to a location on a record.” (Spencer ¶ 0030).

93. Spencer also makes references to an “analog audio waveform” embodiment in its disclosure. (Spencer ¶ 0014). This waveform, as with all disclosures of Spencer, is used in conjunction with synchronizing the position of a record on the turntable with digital music.

94. Nowhere within Spencer is it described that the turntable or controller unit 100 digitizes this analog waveform and transfers it to the data processor unit 200 via USB. Spencer teaches the opposite. In at least in this respect, the invention of Spencer operates like a common record player in that analog audio from the record (through “analog electrical signals”) are communicated to the data

processor unit 200: “[T]he cartridge 122 communicates those analog electrical signals to the data processor unit 200 for sampling” (Spencer ¶ 0036). The controller unit 100 does not digitize the audio on the record.

95. Spencer further discusses that “data processor unit 200 may sample the audio waveform generated by the interaction of the stylus 123 and groove sidewalls at a progressively increased rate such that the analog audio waveform is sampled at an overall constant rate.” (Spencer ¶ 0067). That is, any digitization of the analog audio waveform occurs not on the turntable (controller) 100 but on the data processor unit 200, which the invention then uses to “preserv[e] the correspondence between the needle location and the sampled analog audio waveform” for synchronization purposes. (Spencer ¶ 0097).

96. I also note that there is no description in Spencer that the “sampled analog waveform” created by data processor unit 200 (and not the controller unit 100) nor the “digitized audio signals” (as discussed in Paragraph 30 of Spencer) can be used to listen to music or speech, let alone such music or speech that is “[r]eproducibly indistinguishable to a listener” from the analog audio recording stored on the LP. The waveform discussed in Spencer is used for synchronization purposes, and thus could use a very low sampling rate—not sufficient to reproduce the music or speech but sufficient for synchronization purposes.

5.4 Cohen

97. Cohen discloses “a phonographic turntable with a MIDI output” (Cohen ¶ 0008).

98. The aim of Cohen is “to provide a way for disk jockeys or ‘turntablists’ to directly affect music performances through a standard interface such as a MIDI...interface which is controlled in ways which are familiar to disk jockeys or ‘turntablists’, such as a turntable, and which can lead to similar or analogous sonic results” (Cohen ¶¶ 0006-0007).

99. The end result of Cohen is stated as follows: “With this apparatus, the disk jockey or ‘turntablist’ can use standard manual techniques to vary the rotation of the record as the phonographic needle/cartridge impinges against the record thereby generating MIDI time code signals and related signals which control the playback of an audio performance thereby creating sonic effects similar to those which would be created by the same standard manual techniques with a conventional turntable and a conventional record upon which the audio performance is recorded” (Cohen ¶ 0009).

100. Per Cohen ¶ 0008, Cohen achieves this aim as follows:

- “a phonographic turntable” with “a standard platter, motor, phonographic cartridge/needle and tone arm” “plays a vinyl record which includes a recorded audio time code, typically in analog format”

- “The analog signal which is produced by the phonographic cartridge/needle impinging against the rotating vinyl record is processed by an RIAA preamplifier and an analog-to-digital converter.”
- “The digital data output stream from the analog-to-digital converter is fed to a microprocessor or a digital signal processor which interprets the data and extracts timing information in order to produce MIDI time code. Furthermore, the microprocessor or digital signal processor can interpret variation in the data stream as MIDI control messages.”
- “The MIDI time code signals and related signals are used to control the playback of a live or recorded audio performance which may be stored on a device such as a MIDI keyboard or computer.”

101. In this process, Cohen requires the vinyl record to carry only time codes, something Cohen acknowledges is not found in typical vinyl records which only contain music or speech. Cohen’s vinyl record does not carry recorded music or speech:

- “Record 12 typically has the appearance of a twelve inch, 33 1/3 rpm vinyl record with a spiral groove. However, the groove of record 12, **rather than having a musical performance** in analog format, has a MIDI audio time code encoded therein in analog format” (Cohen ¶ 0014; emphasis supplied).
- “Turntable 14, therefore, generates analog output from record 12 in a way which is largely conventional, except that the resulting analog signal from record 12 includes an analog MIDI audio time code” (Cohen ¶ 0015).

102. Cohen then digitizes the output of the phono cartridge but only uses that “digital data output stream” to extract MIDI time code, MIDI control messages (Cohen ¶ 0008), and other MIDI control signals (Cohen ¶ 0016), which then through a MIDI output 22 control a sound generating or synthesizing device such as a MIDI keyboard (Cohen ¶ 0008), a MIDI electronic violin or wind instrument, or an external MIDI device which is communicating a live performance” (Cohen ¶ 0017).

103. Cohen also discloses an additional feature in which a conventional analog record is read (Cohen ¶ 0018). In this instance, “conventional MIDI output is then output from the second MIDI output 24.” *Id.*

104. The MIDI standard explains that a “MIDI file does not contain the sampled audio data, it contains only the instructions needed by a synthesizer to play the sounds” (MIDI Spec p.7, “MIDI vs. Digitized Audio”). As explained above, Cohen teaches use of a record that contains only MIDI audio time codes, and not music or speech. With respect to its teaching of the use of a conventional record in ¶ 18, Cohen teaches outputting MIDI instructions for a synthesizer to play sounds. It does not teach digitizing analog audio into a digital format.

105. As in Spencer, Cohen uses a turntable as a control for play of music stored on or generated by an external electronic instrument. While Spencer does not specify the format of that control information, Cohen is specific to MIDI.

106. Cohen ¶ 0015 and ¶ 0016 list in detail the components of the preferred embodiment but separate items stated as included in the turntable (the “typical turntable components”) from items fed by the analog signal from the turntable (the preamplifier, analog-to-digital converter, and microprocessor):

- **“Turntable 14 includes** typical turntable components such as a platter 15 (see FIG. 2) upon which record 12 is placed, a motor to drive the platter at 331/3, rpm, a phonographic cartridge/needle 17 which is inserted into the spiral groove of record 12 during playback, and a tonearm 19 for supporting the phonographic cartridge/needle 17.” (Cohen ¶ 0015; emphasis supplied)
- **“The analog output from turntable 14 is received** by RIAA (Recording Industry Association of America) preamplifier 16 in order to amplify the analog signal (Cohen ¶ 0015; emphasis supplied). The analog output of RIAA preamplifier is received by analog-to-digital converter 18 for conversion into a digital data stream. The digital data stream output from analog-to-digital converter is received by microprocessor or digital signal processor 20” (Cohen ¶ 0016).

5.5 Georges

107. Georges discloses “Systems and methods for creating, modifying, interacting with and playing music” (Georges Abstract).

108. While Georges can receive analog audio and digitize that for storage and manipulation, this is only disclosed as “A codec preferably is provided for receiving microphone input” (Georges Abstract). Georges does not address

anything specific to turntables or vinyl records, let alone disclose building electronics into a turntable.

109. Rather, Georges is not intended as a player for, and teaches away from receiving, storing, or playing, audio from a record played on a turntable:

- “Rather than storing a song as an audio stream (i.e.; MP3, WMA, WAV, etc.), it is highly desirable to save the configuration information that was used to generate the song” (Georges ¶ 0215)
- “Saving the configuration information itself, rather than an audio stream, preferably allows the user to pick up where they left off, in that they can load a previously saved piece of music, and continue working with it. Such an advantage is not easily possible with a single, combined audio stream, and to divide the audio into multiple streams would exponentially increase the file size, and would not be realizable in the current architecture without significant trade-offs in portability and/or quality.” (Georges ¶ 0216)

110. It appears Georges has been cited in this matter just because Georges discloses certain digital data output on “a high speed bus (e.g., **IEEE 1394**, or USB, etc.) of a personal computing system” (Georges ¶ 0311; emphasis supplied).

6 CLAIM TERMS

111. I understand the claims of the '498 patent must be construed as I set forth in more detail above, typically being given their customary and ordinary meaning.

6.1 “turntable”

112. Claim 1 of the '498 patent is to “A turntable” ('498 2:60).

113. The specification of the '498 patent shows a “phonographic turntable” within which is included a specific “audio conversion device” comprising an “analog-to-digital converter and a controller:”

- “a turntable which **includes** an **internal** analog to digital converter and a controller for a standard digital format” ('498 Abstract; emphasis supplied)
- “The present invention relates to a phonographic turntable which **includes** a built-in audio conversion device, which is typically to USB, firewire, or other computer digital communication protocol, **inside the turntable**” ('498 1:8-11; emphasis supplied).

114. This implies that the “audio conversion device” comprising an “analog-to-digital converter and a controller” is not found in a typical turntable, but the invention adds those electronic components to a typical turntable.

115. The '498 patent specification lists the components of “turntable 10 of the present invention, in the USB configuration” ('498 2:9-10) starting with “a rotatable platter 12 (shown in phantom), a pivotable or similar traveling tonearm 14 supporting a phono cartridge 16 at its distal end, typically by way of a conventional attachment between tonearm 14 and phono cartridge 16” ('498 2:11-14).

116. From my familiarity with the art (*e.g.*, the Audio Note TT1 turntable reviewed in 2003¹ as shown below) and consistent with the citations above, I recognize this grouping, along with “the cabinet of the turntable 10” (’498 2:24-25) as a typical phonographic turntable.



117. The list then continues with “the analog to digital converter (ADC) 18...the USB controller 20...a USB jack 22 which is on the cabinet of the turntable 10” (’498 2:19-25).

118. I find this grouping to be:

- The “internal analog to digital converter and [a] controller for a standard digital format” which the turntable inventively “includes” (’498 Abstract)

¹ “The Year’s Best Turntable – Audio Note TT1” What HiFi? Magazine, 2003
(https://www.audionote.co.uk/_files/ugd/3e7c3b_5880b72e4038426d9c70895fb3842b02.pdf)

- The “audio conversion device” which ’498 inventively “includes...inside the turntable” (’498 1:9-11)

119. On this basis, I find the term “turntable” to reflect that within which the disclosed “audio conversion device” is inventively included, so the term “turntable” should be construed as something such as:

- An appliance for playing records that includes a rotatable platter, stationary platform (*e.g.*, cabinet), tonearm, and phono cartridge.

120. As noted, the language of claim 1 then inventively recites that an analog-to-digital converter and controller are located within the turntable.

6.2 “controller”

121. Claim 1 of the ’498 patent requires “a controller” (’498 2:66).

122. The specification of the ’498 patent describes the disclosed “controller” in two places:

- “The output of the analog to digital converter 18 is digital and is received by the USB controller 20. Both the analog to digital converter 18 and the USB controller 20 are within the turntable 10. This results in a USB signal being generated from the turntable 10 from a USB jack 22 which is on the cabinet of the turntable 10.” (’498 2:19-25)
- “The output of the analog to digital converter 18 is digital and is received by the firewire controller (link layer) 26. The output of the rewire controller (link layer) 18 is received by physical (PHY) layer 28. The analog to digital converter 16, the firewire controller (link layer) 26 and

the physical SHY) layer 28 are all contained within the turntable 10. This results in a USB signal being generated from the turntable 10 from a firewire jack (IEEE-1394) 30 which is on the cabinet of the turntable 10.”
(’498 2:40-48)

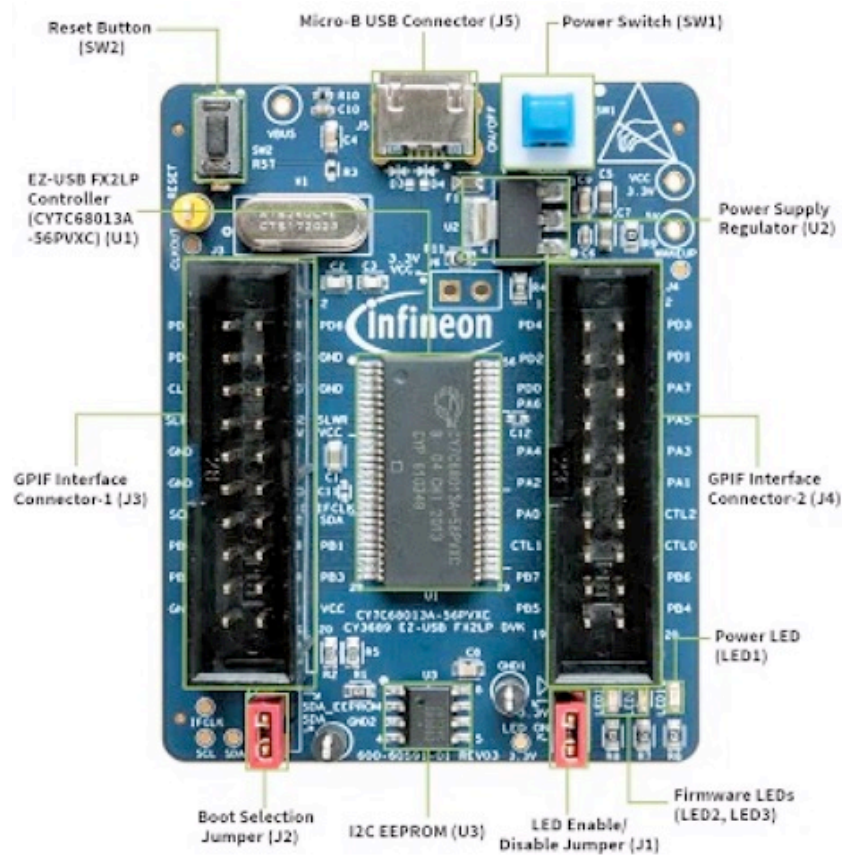
123. Based on these descriptions and my familiarity with the art (*e.g.*, the Cypress/Infineon CY3689 USB evaluation USB controller circuit board depicted below², based on the Cypress CY7C68013A USB controller chip³ introduced in 2003⁴, the block diagram of which is shown below), the term “controller” should be construed as:

- An electronic device which receives a digital data stream, renders it into a specific data format, and manages the output of that formatted stream on a specific hardware interface

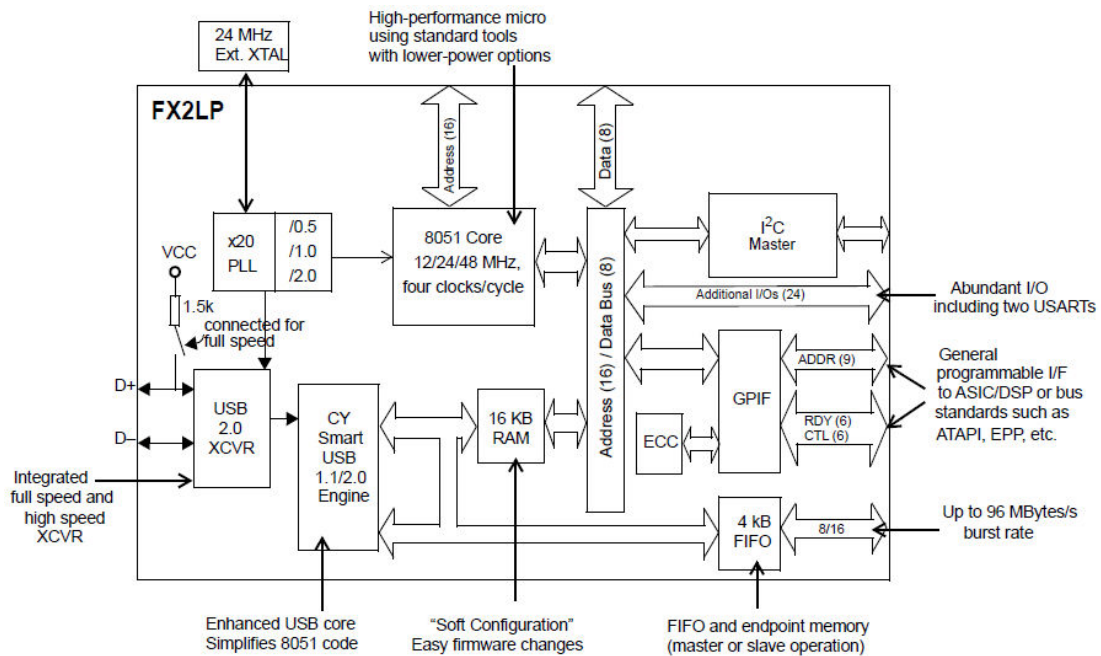
² https://www.infineon.com/export/sites/default/_images/product/evaluation-boards/CY3689_0.png_1892450672.png

³ https://www.infineon.com/dgdl/Infineon-CY7C68013A_CY7C68014A_CY7C68015A_CY7C68016A_EZ-USB_FX2LP_USB_Microcontroller_High-Speed_USB_Peripheral_Controller-DataSheet-v31_00-EN.pdf?fileId=8ac78c8c7d0d8da4017d0ec9f7974252

⁴ *Ibid*, p. 69 shows original version (ECN 124316) dated March 17, 2003



Cypress/Infineon CY3689 USB controller evaluation circuit board



Cypress CY7C68013A USB controller chip block diagram

6.3 “representative”

124. Claim 1 of the ’498 patent introduces the term “representative” in the following ways:

- “an analog audio signal representative of an audio recording” (’498 2:62-63)
- “an output digital audio signal of music or speech representative of an audio recording” (’498 2:67-3:1)
- “an output of said analog to digital converter, representative of said analog audio signal” (’498 3:1-3)

125. The specification of the ’498 patent further presents the term “representative” in the following way:

- “a conventional analog electrical signal, representative of the audio recording on the LP record” (’498 2:16-18, 2:37-38)

126. The ’498 specification uses the word “conventional” in the following additional ways:

- “a turntable with such conventional features as a revolving platter, a pivoting tonearm and an analog phono cartridge” (’498 1:52-54)
- “a conventional attachment between tonearm 14 and phono cartridge 16” (’498 2:13-14, 2:33-34)
- “a conventional LP record” (’498 2:15, 2:35)

127. From this usage pattern I find the ’498 specification to use “conventional” to describe the typical scenario of turntable use, which is to provide

accurate delivery of the actual audio (*e.g.*, music or speech) recording on a record.

The '498 patent inventively preserves that accurate reproduction, albeit in a different format (*i.e.*, in digital rather than analog form).

128. On this basis, the term “representative” should be construed as:

- Reproducibly indistinguishable to a listener, but in a different format from the original.

7 GROUND 1: CLAIMS 1, 2, AND 4-6 OVER CORTELLESI

129. I understand the first instituted ground is whether claims 1, 2, and 4-6 of the '498 patent are obvious over Cortellesi. For the reasons provided below, claims 1, 2, and 4-6 of the '498 patent are patentable in view of Cortellesi.

7.1 Claim 1

130. Independent claim 1 is reproduced below.

1. A turntable including:
a rotatable platter;
a tonearm for receiving a phono cartridge for generating an analog audio signal representative of an audio recording;
an analog to digital converter for receiving an analog audio signal from the phono cartridge; and
a controller responsive to said analog to digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal;
wherein said analog to digital converter and said controller are included within said turntable; and
wherein said output digital audio signal is output from said turntable and uses standard computer protocol.

7.1.1 Cortellesi Does Not Disclose or Render Obvious the Claimed Analog-to-Digital Conversion

131. I understand Petitioners allege that because Cortellesi discloses the possibility of digital storage of records (Petition p. 28) that it would have been obvious to use Cortellesi to practice the analog-to-digital conversion of '498 patent's claim 1.

132. Petitioners state:

- “Cortellesi refers to “a first embodiment of the apparatus provided with a record player” as shown in Fig. 4. (Ex. 1002, ¶56). Cortellesi’s detailed description with respect to this embodiment focuses on a “virtual disk”. (Ex. 1004, 4:33-50)(Ex. 1002, ¶56). It would, however, have been obvious to use the record player of Fig. 4 to playback standard vinyl records containing audio recordings, and connect the analog output to the analog-to-digital converter and controller specified by Cortellesi. (Ex. 1002, ¶56).” (Petition pp. 26-27)

133. Petitioner is incorrect for at least the following reasons:

134. First, as discussed above, Cortellesi discloses utilizing a “common record player” in two different configurations. In the first configuration, the common record player is an outside unit that is connected to the apparatus of Figure 1 via the analog to digital converter. When connected in this manner, the common record player is used to play LPs, and the analog signal generated by the

tone arm is digitized and transmitted from the turntable to the controller by the analog to digital converter.

135. In this configuration, the specification is clear that the common record player is an “outside unit.” Because it is an outside unit, it is outside of (*i.e.*, a separate unit from) the apparatus. Consequently, the analog to digital converter and controller are not within the turntable as required by claim 1 in this configuration.

136. The second configuration disclosed by Cortellesi uses the “common record player” as a means for rotating the virtual disk VD. As discussed below, this configuration has nothing to do with conventional playing of a conventional record, let alone capturing the signal from that in any digital form. Accordingly, a knowledgeable but non-inventive POSITA would not see why or how to use the second configuration of Cortellesi to practice the analog to digital conversion of ’498 claim 1.

137. The “common record player” of Cortellesi, to which Cortellesi does not assign a mnemonic, when used at all as an alternative to the “knobs MA” (Cortellesi 4:22-26), is only used to rotate Cortellesi’s “virtual disk VD” (Cortellesi 4:40-41), which is only a ring of metal balls in an otherwise featureless plastic circle (Cortellesi 4:33-39).

138. Sensing of rotation of that “virtual disk” is only done “without using any pick-up arm” (Cortellesi 4:42) but instead with a “directional sensor of

magnetic flux SD” (Cortellesi 4:43-44), which is not part of a “common record player” and could not be used to play a conventional record of music or speech.

139. Second, nowhere in Cortellesi is there any disclosure or suggestion to include an analog to digital converter internally within a “common record player” as required by ’498 patent claim 1 as supported by the ’498 patent’s specification as discussed in detail above. That is, Figure 4 does not disclose the apparatus of Fig. 2 (or Fig. 1).

7.1.2 Cortellesi Does Not Disclose the Claimed Inclusion Within the Turntable of the Analog to digital Converter or Controller

140. I understand Petitioners allege that “Cortellesi teaches directly an embodiment of its invention that is encompassed by a turntable product as shown in Fig. 4.” (Petition p. 31).

141. Petitioners state:

- “The inclusion of the analog-to-digital converter (CA/D) and the controller (EC) is noted directly by Cortellesi’s teaching that Fig. 4 represents an embodiment of its apparatus (**which contains the analog-to-digital converter (CA/D) and the controller (EC)**).” (Petition p. 31; emphasis supplied)

142. The bolded text in the above allegation is incorrect for at least the following reasons:

143. In Figure 4, Cortellesi discloses a virtual disk VD that is “placed on the turntable of a common record player and handled as a common long playing record (L.P.), however, without using any pick-up arm. (Cortellesi 4:40-42). In other words, the virtual disk VD is removably placed on the platter of a common record player, and the common record player is used only to rotate the virtual disk VD.

144. Additionally, the only item Cortellesi discloses “integral with” (Cortellesi 4:44) the otherwise “common record player” of Fig. 4 is the “directional sensor of magnetic flux SD” (Cortellesi 4:43-44) which is there only to sense the passage of the sequence of metal balls in the “virtual disk VD” (Cortellesi 4:47-50).

145. The “directional sensor of magnetic flux SD” operates “without using any pick-arm” (Cortellesi 4:43). As a result, the “common record player” cannot play a “common long playing vinyl record” (Cortellesi 4:41) when the virtual disk is placed on the turntable of the common record player. In that configuration, the turntable does not generate any signal at all because it is only rotating the virtual disk VD and the tone arm is not in use. Further, the virtual disk VD only generates digital signals corresponding to speed and position information.

146. Accordingly, the configuration shown in Figure 4 cannot generate the claimed “analog audio signal representative of an audio recording” (’498 2:63) let

alone the claimed “output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal” (’498 2”67-3:3).

147. Accordingly, that which is shown in Figure 4 does not disclose the claimed invention.

7.1.3 Cortellesi Does Not Render Obvious the Claimed Inclusion Within the Turntable of the Analog to digital Converter or Controller

148. I understand Petitioners allege that “Alternatively, it also would have been obvious to ‘include’ the analog-to-digital converter and controller within the turntable of Fig. 4.” (Petition p. 31).

149. Petitioners state:

- “Specifically, Cortellesi explains that the invention is a ‘[p]ortable apparatus for storing, handling and listening to pieces of music’. Because the analog-to-digital converter (CA/D) and the controller (EC) are both necessary for these functions, **it would have been obvious to ‘include’ them within the turntable.** (Ex. 1004, 2:23-3:37, 2:50-58, 3:25-36, 4:23-55)(Ex. 1002, ¶65).” (Petition p. 31; emphasis supplied)

150. This is incorrect for at least the following reasons:

151. As discussed in detail above, Cortellesi discloses “a cheap, reliable, portable **electronic** apparatus using a dedicated hard-disk where it is possible to

store digitally several pieces of music and to play them **without the need of having the original musical supports or records**” (Cortellesi ¶ 0002).

152. The list of what Cortellesi’s “preferred embodiment” includes (Cortellesi ¶ 0004) has only electronic components, among which are the “knobs MA and manual controls for selecting the piece of music and controlling position, speed, start, stop (scratching)” (Cortellesi 3:6-8). These enable Cortellesi’s “portable apparatus” (Cortellesi 2:13) to be “performing automatically the same operations (scratching) as those performed today on the records placed on the turntables of the record players located in the console” (Cortellesi 1:43-46) without the need for, or the size, weight, and fragility of, a turntable, let alone a turntable built into this apparatus or into which this apparatus is built.

153. Cortellesi does disclose a second embodiment involving a “common record player” but this is optional, not a necessary part of Cortellesi’s “portable electronic apparatus:

- **“In addition to the use of knobs MA which allow the scratching to be carried out**, the invention provides, as already mentioned, the use of a virtual disk to be placed on the turntable of a common record player (see Figs 3a and 3b)” (Cortellesi 4:22-26; emphasis supplied)

154. Further, as set forth in Cortellesi 4:22-5:3 and discussed in detail above, Cortellesi only uses the rotatable platter of the optional “common record

player” “without using any pick-up arm” to rotate a “virtual disk” of a ring of metal balls embedded in a plastic circle under a “directional sensor of magnetic flux” just to control playback (*e.g.*, scratching) of audio content digitally stored in Cortellesi’s electronics.

155. Petitioners further state:

- A POSITA further would have found it *obvious* to integrate an analog-to-digital converter and controller *within* the turntable of Cortellesi. As Dr. Moon explains, in the relevant timeframe, analog-to-digital converters and controllers were small integrated circuits that had been integrated into the housings of numerous consumer products. (Ex. 1002, ¶66)(citing Ex. 1014, 7:53-67; Ex. 1015, 5:19-25; Ex. 1016, Abstract; Ex. 1017, 7:35-39; Ex. 1018, Figs. 5-7, rn. 3, 4, and 41, 5:12-33; Ex. 1019, 4:26-39). It would have been obvious to manufacture the device with integrated circuits within the housing in order to protect these components from dirt, moisture, and electrical discharge, to make the product more attractive and less cumbersome to users, to avoid potential electric shock to users, and avoid additional external wiring. (Ex. 1002, ¶66). This could have been done with no unpredictable results. *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416-21 (2007).” (Petition pp. 31-32)

156. The above text starts with the presumption, which is incorrect as discussed above, that Cortellesi either discloses or renders obvious the inclusion of an analog to digital converter or controller within a turntable. The fact that such

electronics could be made small does not remedy the incorrectness of the initial presumption.

157. Further, it would not be obvious to make the modification proposed by Dr. Moon.

158. As discussed above, Cortellesi emphasizes that it is intended to overcome the problem of disk jockeys needing to resort to expensive, sophisticated, cumbersome apparatus including juke-box of large playing capacity that does not allow a personalized handling of the pieces of music in succession or the so-called scratching with the purpose of personalizing the played music” in order to overcome the “problem of having a lot of records available.” (Cortellesi ¶ 0001).

159. Cortellesi explains that the “present invention aims at overcoming the problems mentioned above by providing a cheap, reliable, portable electronic apparatus using a dedicated hard-disk where it is possible to store digitally several pieces of music and to play them without the need of having the original musical supports or records.” (Cortellesi ¶ 0002).

160. DJs perform at various types of venues, with different levels of equipment already available on site. For example, a backyard performance at a small event such as a birthday may not have any equipment at all. For such a venue, the DJ will need to bring everything, including speakers, amplifiers, cables,

and a sufficient source of music. Further, such an event may deemphasize the performance aspect of the DJs job and the DJ may only play music and not put on a visual display.

161. As another example, a DJ may be hired to coordinate the music at a wedding. Like the backyard performance, the DJs role may be to play music and not put on a visual display. But, unlike the backyard performance, the venue may already have equipment such as speakers.

162. As yet another example, a DJ may be hired to perform at a venue such as a nightclub. In that case, nearly all of the technical equipment (speakers, amplifiers, displays, control systems, etc.) will already be present at the venue, but the DJ will be expected to bring a music library and put on a display for the audience that may include scratching (virtual or otherwise).

163. Cortellesi emphasizes the need for a portable apparatus that may be flexible enough to handle any and all of the above types of performances. Accordingly, to maximize portability, it would be ideal to minimize the size of the apparatus and to not integrate it into any particular outside source so as to enable the DJ to be able to select the equipment, including outside sources, that are needed for a particular performance.

164. Integrating the apparatus disclosed in Cortellesi with the common record player disclosed in Figure 4, as proposed by Sony and Dr. Moon, would

hinder that portability by requiring a DJ to always bring a turntable to performances, including those where the presence of a turntable is not desirable.

165. Accordingly, a POSITA would not be motivated to modify the disclosure of Cortellesi for the reasons provided by Dr. Moon and Sony.

Accordingly, it would not be obvious to make such modifications to Cortellesi.

7.1.4 Cortellesi Does Not Disclose or Render Obvious the Claimed “said output digital audio signal is output from said turntable”

166. I understand Petitioners allege that:

- “A POSITA would have understood and found obvious that Cortellesi teaches a system wherein a variety of potential inputs provide analog or digital signals representing an audio recording, wherein the analog inputs are converted to digital, wherein the CPU EC receives the digital inputs and either stores the music in digital form, outputs the music to analog speakers, or outputs the music in digital form (e.g. over the USB interface) to an external system such as a computer. (Ex. 1002, ¶100).” (Petition pp. 47-48)

167. However, as discussed in detail above, the configuration shown in Figure 4 of Cortellesi would not involve an output digital audio signal” that is “output from said turntable” because the only signals consist of speed and position information output from the sensor SD to the separate device of Figure 2, which then digitizes the signals using the ADC. The common record player as disclosed

in Figure 4 of Cortellesi does not create any output because it is used only for the rotation of the virtual disk.

168. Further, Cortellesi's optional "common record player" does not include the electronics Cortellesi discloses which feed Cortellesi's "USB-interface" (Cortellesi 4:8-9, Fig. 1). To the extent Cortellesi's "common record player" were used to play a conventional record, its only output would be analogic, as was the case with common record players at the time of the invention.

169. In summary, I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious '498 Claim 1.

7.1.5 Cortellesi Does Not Teach a Controller That Generates an Output Digital Audio Signal As Required by the Claims

170. Claim 1 also recites "an analog to digital converter for receiving an analog audio signal from the phono cartridge" and "a controller responsive to said analog to digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal," wherein "said output digital audio signal is output from said turntable and uses standard computer protocol."

Ex. 1001 at 2:64-3:7.

171. Cortellesi, however, does not disclose or render obvious these limitations.

172. Sony argues that Cortellesi “teaches an analog to digital converter for receiving an analog audio signal from the phono cartridge.” Paper 2 at 40 (emphasis modified).

173. Specifically, Sony references the “digital/analogue converter CA/D,” which is shown in Figure 1. *See id.* (quoting Ex. 1004, 2:22-36, which describes Figure 1); *see also id.* at 42. Sony argues it would have been obvious from Cortellesi that this CA/D would have received an analog audio signal from the phono cartridge of the turntable (shown in Figure 4) playing a standard LP. *See id.* at 40.

174. Sony then asserts that the “central processing unit EC” is the recited controller of Claim 1. Paper 2 at 41.

175. The central processing unit EC, however, is not a “controller” as used in the ’498 patent. That is, there is no indication that the EC is “an electronic device which receives a digital data stream, renders it into a specific data format, and manages the output of that formatted stream on a specific interface.”

176. Cortellesi also does not disclose the central processing unit EC “generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter,” as recited by claim 1, nor is this obvious in view of Cortellesi.

177. As cited by Sony in the Petition, Cortellesi only discloses the EC “processing and delivering data.” *Id.* (quoting Ex. 1004, 2:25-33).

178. Processing and delivering data is not the same as “generating an output digital audio signal.” To the extent that Sony is referring to the central processing unit’s role in storing and retrieving files in the storage UM, that does not meet the limitation.

179. That is, even if Cortellesi disclosed the EC taking a music file from storage and outputting it via the USB (which it does not), that does not meet the limitation of “generating an output digital audio signal . . .” recited in the claims , as no generation occurs in this scenario.

180. The only generation of an output digital audio signal discussed in Cortellesi is in conjunction with its “playing unit, RD/A.” In particular, Cortellesi’s “playing unit, RD/A” generates, from the raw data, an output digital audio signal that can be played in the form of S/PDIF audio signals. Ex. 1004 at 2:50-54.

181. The “playing unit” of Cortellesi, however, cannot be used to invalidate the challenged claims, and Sony does not assert otherwise in the Petition or its claim mappings.

182. Claim 1 recites “wherein said output digital audio signal is output from said turntable and uses standard computer protocol,” with Claims 2 and 3 clarifying that the protocol is USB and firewire, respectively.

183. The “playing unit, RD/A” generates and outputs “digital signals in S/PDIF standard,” but as described by the ’498 patent, this is not a “standard computer protocol.” *See* Ex. 1001 at 1:35-38 (“The SPDIF (Sony/Phillips Digital Interface) has been built into some turntables in order to provide a digital output. However, this is not a standard protocol such as USB (universal serial bus) or firewire (IEEE 1394).”). Nor does S/PDIF satisfy the dependent claim’s requirements of USB or Firewire.

184. In any event, Sony does not attempt to rely on S/PDIF—relying instead only on USB as the digital audio signal that is “output from said turntable” and that “uses standard computer protocol.” *See* Paper 2 at 46.

185. In addition, Cortellesi does not teach the “playing unit, RD/A,” which is also not relied upon by Sony, as outputting music via USB.

186. As clearly shown above in Figure 1, the playing unit, RD/A outputs only via stereo and via S/PDIF and not “USB.” Therefore, because the central processing unit EC is not a controller as recited in the claims, Sony has failed to establish that any of the claims are invalid over Cortellesi.

7.1.6 Cortellesi Is Not Within the Art Relevant to a POSITA

187. Cortellesi’s apparatus is a complex device intended, as noted by Petitioners (Petition p. 21), for professional disk jockeys (performing in, *e.g.*, clubs and weddings):

- “The present invention relates to the professional playing of records and particularly is directed to the personnel of discos, dance-halls and restaurants, where there is the problem of having a lot of records available, as well as professionals so-called disk jockeys working in discos and private broadcasting companies with the need of being always ready to transmit pieces of music by request or jingles without solution of continuity.” (Cortellesi 1:3-11)

188. Cortellesi’s apparatus would not appeal to consumers simply interested in practical playing of music and speech from their LP records into digital computers or portable digital audio players.

189. A POSITA would thus:

- not be motivated to try applying Cortellesi to the market needs addressed by the inventors of the ’498 patent; and
- regard attempting to understand and apply Cortellesi to those needs as requiring undue experimentation.

190. Cortellesi is thus not analogous art to the ’498 patent.

191. In summary, I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious ’498 Claim 1.

7.2 Claim 2

192. Cortellesi does not disclose or render obvious “The turntable of claim 1 wherein said output digital audio signal uses universal serial bus (USB) protocol.”

193. Petitioners state:

- “A USB interface uses universal serial bus (USB) protocol, and thus the digital audio signals being communicated by the interface also use that protocol. (Ex. 1002, ¶101).” (Petition p. 48)

194. This is irrelevant because, as discussed above, Cortellesi’s “USB-interface” does not meet claim 1’s requirement that “said output digital audio signal is output **from said turntable.**”

195. I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious Claim 2.

7.3 Claim 4

196. Cortellesi does not disclose or render obvious “The turntable of claim 1 wherein said turntable further includes a jack for outputting said output digital audio signal.”

197. Petitioners state:

- “A POSITA would have understood and found obvious that, in the relevant timeframe, certain of the interfaces involved wired or direct physical connections (e.g., USB, Audio/video TV interface, and the Digital interface for pocket cartridges ITA) that required a ‘jack’ for outputting.” (Petition p. 49)

198. This statement fails to address the claim requirement, unmet by Cortellesi as discussed above, that “said turntable further includes a jack”

supported by the '498 specification disclosing "USB jack 22 which is on the cabinet of the turntable 10" ('498 2:24-25).

199. I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious '498 Claim 4.

7.4 Claim 5

200. Cortellesi does not disclose or render obvious "The turntable of claim 1 wherein said rotatable platter is configured and arranged to receive a record with an audio recording thereon."

201. Petitioners state:

- "Cortellesi renders this claim obvious for the reasons discussed under the section entitled 'Rationale (Motivation) Supporting Obviousness', above. A rotatable platter configured and arranged to receive a record with an audio recording thereon was a standard component of a common record player in the relevant timeframe. (Ex. 1002, ¶103)(citing Ex. 1004, 1:3-17; Ex. 1010, 1:23-36; Ex. 1011, 13:61-63; Ex. 1005, ¶0026; Ex. 1007, p. 001)." (Petition p. 49)

202. This statement fails to address the claim requirement because, as discussed above, Cortellesi does not disclose or render obvious "The turntable of claim 1."

203. I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious '498 Claim 5.

7.5 Claim 6

204. Cortellesi does not disclose or render obvious “The turntable of claim 5 wherein said tonearm is configured and arranged to engage a phono cartridge against a record with an audio recording thereon, the record being supported by said rotatable platter.”

205. Petitioners state:

- Cortellesi renders this claim obvious based on its disclosure of a ‘common record player’, as shown in Fig. 4. A tonearm configured and arranged to engage a phono cartridge against a record with an audio recording thereon, the record being supported by said rotatable platter was a standard component of a common record player in the relevant timeframe. (Ex. 1002, ¶104)(citing Ex. 1004, 1:3-17; Ex. 1010, 1:23-36; Ex. 1011, 13:61-63; Ex. 1005, ¶0026; Ex. 1007, p. 001).” (Petition pp. 49-50)

206. This statement fails to address the claim requirement because, as discussed above, Cortellesi does not disclose or render obvious “The turntable of claim 5.”

207. In summary, I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious ’498 Claim 6.

8 GROUND 2: CLAIM 3 OVER CORTELLESI IN VIEW OF GEORGES

208. I understand the second instituted ground asks whether claim 3 of the '498 patent is obvious over Cortellesi in view of Georges. For the reasons provided below, claim 3 of the '498 patent is patentable over Cortellesi in view of Georges.

209. Cortellesi in view of Georges does not disclose or render obvious “The turntable of claim 1 wherein said output digital audio signal uses firewire (IEEE-1394) protocol.”

210. Petitioners state:

- “Because Cortellesi already teaches outputting audio data using a USB interface, and Georges teaches that USB or IEEE-1394 can be used for the same purpose, it would have been obvious to use firewire (IEEE-1394) protocol in connection with Cortellesi.” (Petition p. 51)

211. This is incorrect for at least the following reasons:

212. First, as with claim 2 as discussed above, this is irrelevant because Cortellesi’s “USB-interface” does not meet claim 1’s requirement that “said output digital audio signal is output from said turntable.”

213. Second, as discussed above, Georges discloses nothing phonographic, let alone a turntable which outputs a digital audio signal, so also does not meet claim 1’s requirement that “said output digital audio signal is output from said turntable.”

214. Further, Petitioners state

- “Georges is analogous art because it is in the same field as the ’498 patent (audio signals technology).” (Petition p. 50)

215. However, the field of the ’498 patent is not “audio signals technology” but, as discussed above regarding definition of a POSITA, is the far more specific “practical playing of music or speech from LP records by consumers into a digital computer or other digital device (e.g., the Apple iPod and other portable MP3 audio players available before 2004) for storing and subsequent playing that music or speech from the digital device.”

216. Georges is not intended as player for, and teaches away from receiving, storing, or playing, audio from a record played on a turntable:

- “Rather than storing a song as an audio stream (i.e.; MP3, WMA, WAV, etc.), it is highly desirable to save the configuration information that was used to generate the song” (Georges ¶ 0215)
- “Saving the configuration information itself, rather than an audio stream, preferably allows the user to pick up where they left off, in that they can load a previously saved piece of music, and continue working with it. Such an advantage is not easily possible with a single, combined audio stream, and to divide the audio into multiple streams would exponentially increase the file size, and would not be realizable in the current architecture without significant trade-offs in portability and/or quality.” (Georges ¶ 0216)

217. Georges discloses a complex electronic device for use by sophisticated disk jockeys and music composers, and is not analogous art.

218. A POSITA would thus:

- not be motivated to try applying Georges to the market needs addressed by the inventors of the '498 patent; and
- regard attempting to understand and apply Georges to those needs as requiring undue experimentation.

219. In summary, I find nothing in the Petition to support the allegations that Cortellesi in view of Georges discloses or renders obvious '498 Claim 3.

9 GROUND 3: CLAIMS 1, 2, 4-6 OVER SPENCER IN VIEW OF COHEN

220. I understand the third instituted ground asks whether claims 1, 2, and 4-6 of the '498 patent are obvious over Spencer in view of Cohen. For the reasons provided below, claims 1, 2, and 4-6 of the '498 patent are patentable over Spencer in view of Cohen.

9.1 Claim 1

221. Independent claim 1 is reproduced below.

1. A turntable including:
a rotatable platter;
a tonearm for receiving a phono cartridge for generating an analog audio signal representative of an audio recording;
an analog to digital converter for receiving an analog audio signal from the phono cartridge; and
a controller responsive to said analog to digital converter for generating an output digital audio signal of music or

speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal;
wherein said analog to digital converter and said controller are included within said turntable; and
wherein said output digital audio signal is output from said turntable and uses standard computer protocol.

9.1.1 Neither Spencer nor Cohen Discloses or Renders Obvious the Claimed Output Digital Audio Signal from the Turntable

222. Petitioners assert that the combination of Spencer and Cohen render obvious the '498 patent. As explained herein, this is incorrect.

223. With respect to Spencer, Petitioners state:

“Spencer teaches a turntable with a phono cartridge that produces an analog audio output. (Ex. 1005, ¶0036)(Ex. 1002, ¶120). This audio output is “digitized” and communicated via USB protocol port 102. (Ex. 1005, ¶0030)(Ex. 1002, ¶120). Because the output of the phono cartridge is analog, but the audio output of the turntable at ports 102 is digital, this already suggests analog-to-digital conversion between the phono cartridge and turntable output. (Ex. 1002, ¶120).” (Petition p. 57).

224. With respect to Cohen, Petitioners state:

- “Cohen, in turn, teaches a broadly-applicable way to produce digital output from a turntable. (Ex. 1006, Fig. 1, ¶¶0015-0016)(Ex. 1002, ¶121).” (Petition pp. 57-58)
- “there is no technical difference between Cohen’s system and the system of claim 1 of the '498 patent—the only difference is found in the

meaning of the information recorded on Cohen’s vinyl record. (Ex. 1002, ¶122).” (Petition p. 58)

- “it would have been obvious to provide an analog-to-digital converter and a controller, such as the ones taught by Cohen *within* the turntable / controller 100 of Spencer. (Ex. 1002, ¶123).” (Petition p. 59)

225. Essentially, Petitioners assert that it would be obvious to modify Spencer to include the analog to digital converter and a controller of Cohen within the turntable of Spencer, and further assert that such a combination would render the claims of the ’498 patent obvious. Petitioners seemingly acknowledge that the resulting combination would not meet each and every limitation of claim 1 of the ’498 patent, but dismiss certain limitations out of hand. *See* Ex. 1002 at ¶ 122 (asserting “there is no technical difference between Cohen’s system and the system of claim 1 of the ’498 patent—the only difference is found in the *meaning of the information* recorded on Cohen’s vinyl record.”) (emphasis in original). As explained herein, that admission attempts to gloss over multiple key limitations in claim 1 of the ’498 patent.

226. Claim 1 of ’498 requires an “output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal” (’498 2:67-3:3).

227. In Spencer, the output of the turntable at ports 102, is not, as claim 1 requires, an “audio signal of music or speech representative of an audio recording.”

As discussed above, the digital signals outputted by Spencer's controller unit 100 are used for synchronization purposes. They are not digital audio signals representative of the music or speech on an LP record's audio recording.

228. I also note that Sony and Dr. Moon cannot rely on the "analog audio waveform" disclosed in Spencer. (Spencer ¶ 0014). Again, as discussed above, this is used in conjunction with synchronization. Nonetheless, as discussed above, the turntable or controller unit 100 of Spencer does not digitize this analog waveform nor is it transferred to the data processor unit 200 via USB.

229. As discussed above, Spencer teaches that the analog audio (through "analog electrical signals") is communicated to the data processor unit 200 (Spencer ¶ 0036), and that the "data processor unit 200 may sample the audio waveform generated by the interaction of the stylus 123 and groove sidewalls at a progressively increased rate such that the analog audio waveform is sampled at an overall constant rate." (Spencer ¶ 0067). That is, any digitization of the analog audio waveform occurs not on the turntable (controller) 100 but on the data processor unit 200. (Spencer ¶ 0097).

230. In addition, there is no disclosure that the sampled analog audio waveform of Spencer (created by the data processor unit 200, not controller 100) or any digitized audio signals (as discussed in Paragraph 30 of Spencer) can be used to listen to music or speech, let alone such music or speech that is

“[r]eproducibly indistinguishable to a listener” from the analog audio recording stored on the LP.

231. In Cohen, the digital output:

- Is not, as claim 1 requires, a “signal of music or speech representative of an audio recording” but, as discussed above, a “digital data output stream” to extract MIDI time code, MIDI control messages (Cohen ¶ 0008), and other MIDI control signals (Cohen ¶ 0016) and the MIDI standard states “the MIDI file does not contain the sampled audio data, it contains only the instructions needed by a synthesizer to play the sounds” (MIDI Spec p.7, “MIDI vs. Digitized Audio”)
- Originates from “Record 12 typically has the appearance of a twelve inch, 33 1/3 rpm vinyl record with a spiral groove. However, the groove of record 12, **rather than having a musical performance** in analog format, has a MIDI audio time code encoded therein in analog format” (Cohen ¶ 0014; emphasis supplied).
- In an alternative embodiment where a conventional analog record is read (Cohen ¶ 0018), is “conventional MIDI output.”

232. Consequently, any combination of Spencer and Cohen would not render the ’498 patent obvious because such a combination would only involve output signals of timing information or MIDI instructions and not “an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal” as required by claim 1.

233. Accordingly, Spencer does not disclose “a controller responsive to said analog to digital converter for generating an output digital audio signal of music or speech representative of an audio recording from an output of said analog to digital converter, representative of said analog audio signal” as required by claim 1.

234. Based on Sony’s assertions in the Petition, it has failed to establish that Spencer discloses “a controller ... for generating an output digital audio signal of music or speech representative of an audio recording ... representative of [a] analog audio signal” that was “generat[ed]” by a “phono cartridge,” wherein the “output digital audio signal is output from said turntable and uses standard computer protocol,” as recited in independent Claim 1. *See* Ex. 1001 at 2:60-3:7.

9.1.2 Neither Spencer nor Cohen Discloses or Renders Obvious the Claimed Controller

235. Additionally, Spencer and Cohen, whether considered individually or in Petitioner’s proposed combination, do not disclose or suggest the controller claimed in the ’498 patent. Accordingly, the ’498 patent is not rendered obvious by the combination of Spencer and Cohen for this additional reason.

236. Petitioners state:

- “Furthermore, a USB interface required a host controller to operate, which can be implemented in software as part of a general-purpose or dedicated processor, or as hardware. (Ex. 1002, ¶121)(citing Ex. 1020,

1:55-61). It would have been obvious to implement a host controller in the microprocessor of Cohen, or as a separate host controller. (Ex. 1002, ¶121).” (Petition p. 58)

237. In Dr. Moon’s claim mapping, he points to Cohen’s “Microprocessor or DSP Block,” and argues that it would have been obvious to modify it to include such “host controller” capability. (Ex. 1002 ¶¶ 121, 140). There is no disclosure of a host controller in either Spencer or Cohen, and is introduced by Dr. Moon with no support.

238. Sony’s and Dr. Moon’s argument, however, fails to address the actual requirement for the controller of claim 1. Indeed, Dr. Moon, without any explanation, states it would be obvious to implement a “host controller,” but he provides no analysis as to how that meets the claim limitations. Ex. 1002 ¶ 121. His analysis seems to be as simple as stating both use the same word “controller,” which obviously has many uses (*e.g.*, Spencer’s use of “controller” for a turntable).

239. Unlike the “host controller” discussed by Petitioners, the controller of claim 1 does not control a “host.” Instead, the controller of the ’498 patent receives a digital data stream, renders it into a specific data format, and manages the output of that formatted stream on a specific hardware interface. Dr. Moon and Sony have not established a host controller or the microprocessor of Cohen meet this limitation. Nor have they provided any explanation as to how a host controller

would “generate an output digital audio signal of music or speech representative of an audio recording,” as required by the claims.

9.1.3 Neither Spencer nor Cohen Is Within the Art Relevant to a POSITA

240. Both Spencer’s and Cohen’s apparatuses are complex devices intended for professional disk jockeys (performing in, *e.g.*, clubs and weddings) specifically to enable control of external audio sources:

- Spencer states “Techniques used by disk jockeys (DJs) to manipulate analog devices have become almost universal...By far, the most popular analog devices with DJs are analog record turntables capable of producing sound off of an analog vinyl record...Manipulation, however, of CD players is not accomplished as easily as with conventional analog turntables” (Spencer ¶ 0004)
- The aim of Cohen is “to provide a way for disk jockeys or ‘turntablists’ to directly affect music performances through a standard interface such as a MIDI...interface which is controlled in ways which are familiar to disk jockeys or ‘turntablists’, such as a turntable, and which can lead to similar or analogous sonic results” (Cohen ¶¶ 0006-0007).

241. Neither Spencer’s apparatus nor Cohen’s apparatus would appeal to consumers simply interested in practical playing of music and speech from their LP records into digital computers or portable digital audio players.

242. A POSITA would thus:

- not be motivated to try applying Spencer, Cohen, or a combination of the two to the market needs addressed by the inventors of the '498 patent; and
- regard attempting to understand and apply Spencer, Cohen, or a combination of the two to those needs as requiring undue experimentation.

243. Thus, neither Spencer nor Cohen is analogous art to the '498 patent.

244. In summary, I find nothing in the Petition to support the allegations that Spencer in view of Cohen discloses or renders obvious '498 Claim 1.

9.2 Claim 2

245. Spencer in view of Cohen does not disclose or render obvious “The turntable of claim 1 wherein said output digital audio signal uses universal serial bus (USB) protocol.”

246. Petitioners state:

- “A USB interface uses universal serial bus (USB) protocol, and thus the digital audio signals being communicated by the interface also use that protocol. (Ex. 1002, ¶101).” (Petition p. 70)

247. This is irrelevant because, as discussed above, the digital signals delivered by Spencer and Cohen are both not the “output digital audio signal” required by claim 1.

248. I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious '498 Claim 2.

9.3 Claim 4

249. Spencer in view of Cohen does not disclose or render obvious “The turntable of claim 1 wherein said turntable further includes a jack for outputting said output digital audio signal.”

250. Petitioners state:

- “As explained above under claim 1, element [1g], it would have been obvious to output the digital audio signal via the ports 102 included in the turntable, thus providing a jack for outputting said output digital audio signal. (Ex. 1002, ¶146).” (Petition p. 70)

251. This is irrelevant because, as discussed above, the digital signals delivered by Spencer and Cohen are both not the “output digital audio signal” required by claim 1.

252. I find nothing in the Petition to support the allegations that Cortellesi discloses or renders obvious '498 Claim 4.

9.4 Claim 5

253. Spencer in view of Cohen does not disclose or render obvious “The turntable of claim 1 wherein said rotatable platter is configured and arranged to receive a record with an audio recording thereon.”

254. Petitioners state:

- “Spencer teaches that the **rotatable platter is configured and arranged to receive a record with an audio recording thereon.**” (Petition p. 71)

255. This statement fails to address the claim requirement because, as discussed above, neither Spencer nor Cohen discloses or renders obvious “The turntable of claim 1.”

256. I find nothing in the Petition to support the allegations that spencer in view of Cohen discloses or renders obvious ’498 Claim 5.

9.5 Claim 6

257. Spencer in view of Cohen does not disclose or render obvious “The turntable of claim 5 wherein said tonearm is configured and arranged to engage a phono cartridge against a record with an audio recording thereon, the record being supported by said rotatable platter.”

258. Petitioner states:

- “See above, claim 1, element [1c] (discussing the tone arm for receiving a phono cartridge) and claim 5 (discussing the rotatable platter and record with the audio recording thereon). The **phono cartridge** contains a stylus (needle) that **engages the record**. (Ex. 1005, ¶0036)(Ex. 1002, ¶149). The record is furthermore **supported by said rotatable plater** [sic]. (Ex. 1005, ¶0034)(“An existing record (not shown) may be arranged on the supporting surface of, and rotated by, the turntable platter 112.”)(Ex. 1002, ¶149).” (Petition pp. 71-72)

259. This statement fails to address the claim requirement because, as discussed above, Spencer in view of Cohen does not disclose or render obvious “The turntable of claim 5.”

260. I find nothing in the Petition to support the allegations that Spencer in view of Cohen discloses or renders obvious ’498 Claim 6.

10 GROUND 4: CLAIM 3 OVER SPENCER IN VIEW OF COHEN AND GEORGES

261. I understand the fourth instituted ground asks whether claim 3 of the ’498 patent is obvious over Spencer in view of Cohen and Georges. For the reasons provided below, claim 3 of the ’498 patent is patentable over Spencer in view of Cohen and Georges.

262. Spencer in view of Cohen and Georges does not disclose or render obvious “The turntable of claim 1 wherein said output digital audio signal uses firewire (IEEE-1394) protocol.”

263. Petitioners state:

- “Because Spencer already teaches providing a digitized output that communicates over USB protocol, and Georges teaches that USB or IEEE-1394 can be used for the same purpose, it would have been obvious to use firewire (IEEE-1394) protocol in connection with Spencer and Cohen. (Ex. 1002, ¶152). This would have had no unpredictable results, would have been within ordinary skill to implement, and would have

afforded the POSITA with a reasonable expectation of success. (Ex. 1002, ¶152). *See* KSR, 550 U.S. at 416-21 (2007).” (Petition p. 72)

264. This is incorrect for at least the following reasons:

265. First, as with claim 2 as discussed above, this is irrelevant because, as discussed above, the digital signals delivered by Spencer and Cohen are both not the “output digital audio signal” required by claim 1.

266. Second, as discussed above, Georges discloses nothing phonographic, let alone a turntable which outputs a digital audio signal, so also does not meet claim 1’s requirement that “said output digital audio signal is output from said turntable.”

267. Further, Petitioners state:

- “Georges is analogous art because it is in the same field as the ’498 patent (audio signals technology).” (Petition p. 50)

268. However, the field of the ’498 patent is not “audio signals technology” but, as discussed above regarding definition of a POSITA, is the far more specific “practical playing of music or speech from LP records by consumers into a digital computer or other digital device (e.g., the Apple iPod and other portable MP3 audio players available before 2004) for storing and subsequent playing that music or speech from the digital device.”

269. Georges is not intended as player for, and teaches away from receiving, storing, or playing, audio from a record played on a turntable:

- “Rather than storing a song as an audio stream (i.e.; MP3, WMA, WAV, etc.), it is highly desirable to save the configuration information that was used to generate the song” (Georges ¶ 0215)
- “Saving the configuration information itself, rather than an audio stream, preferably allows the user to pick up where they left off, in that they can load a previously saved piece of music, and continue working with it. Such an advantage is not easily possible with a single, combined audio stream, and to divide the audio into multiple streams would exponentially increase the file size, and would not be realizable in the current architecture without significant trade-offs in portability and/or quality.” (Georges ¶ 0216)

270. Georges discloses a complex electronic device for use by sophisticated disk jockeys and music composers, so is not analogous art.

271. A POSITA would thus:

- not be motivated to try applying Georges to the market needs addressed by the inventors of the '498 patent; and
- regard attempting to understand and apply Georges to those needs as requiring undue experimentation.

272. In summary, I find nothing in the Petition to support the allegations that Spencer in view of Cohen and Georges discloses or renders obvious '498 Claim 3.

11 CONCLUSION

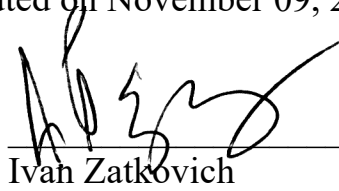
273. For these reasons, it is my opinion that claims 1, 2, and 4-6 of the '498 patent are not obvious over Cortellesi, and claim 3 is not rendered obvious by Cortellesi in view of Georges. Likewise, it is my opinion that claims 1, 2, and 4-6 of the '498 patent are not obvious over Spencer in view of Cohen, and claim 3 of the '498 patent is not rendered obvious by Spencer, in view of Cohen, further in view of Georges. Accordingly, Petitioner's grounds 1-4 should be rejected and the validity of the '498 patent should be confirmed.

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

275. I hereby declare 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.

IPR2023-00294
Patent 7,567,498 B2

Executed on November 09, 2023 in Nyack, New York.



Ivan Zatkovich

Exhibit 1

Ivan Zatkovich

301 W. Platt St. #365 ■ Tampa, FL 33606 ■ (813) 601-8142 ■ izatkovich@ecompc consultants.com

Ivan Zatkovich has over 30 years experience in computer science, PSTN and wireless telecom, the Internet, eCommerce, and software engineering. Mr. Zatkovich is the principal consultant with eComp Consultants, a technology consulting firm specializing in intellectual property consulting for all computer related technology.

Mr. Zatkovich has designed and developed Network Communications systems, Telecommunication applications and messaging systems. Ivan has been a testifying expert on over 50 patent cases including technology for Telecommunications, Wireless protocol. Mobile applications, Media distribution, and eCommerce.



Director / Project Manager	13 years	Managed 6 to 35 member teams. Software development, systems Integration, critical path management, PMP/CMM methodologies.
Telecommunications	11 years	Computer Telephony Integration (CTI) since 1984. Call Center, IVR, ACD, VoIP, and Unified Messaging (Verizon, Bell Canada, PTT Netherlands, and Mercury Communications).
Media devices	8 years	Media streaming servers, Media players, Head Unit media players, Audio Channel encoding, Media content management, DRM and distribution systems. USB, Bluetooth.
Mobile-apps, Wireless communication	9 years	GSM and CDMA cellular protocols, broadband data, wireless messaging, cellular mesh network routing, Cell phone provisioning. Other wireless protocols; 802.11 Wifi, Bluetooth, Zigbee and ZWave.
Expert Witness	15 years	Expert testimony and damage assessment for ecommerce litigation, internet & software copyright, telecommunications. Over 60 cases providing expert reports, depositions, & trial testimony.

Education:

B. S. Computer Science	1980	University of Pittsburgh
Minor in E.E. digital circuit design		
Master's study and thesis in Computer Networks, Results published in Byte Magazine		

Sample Case Experience:

Nuance Communications v. TellMe Networks (Microsoft)

Nature of Case: Patent Litigation
Nature of Engagement: Provided expertise in speech recognition, digital signal pattern matching, and call center technology. Performed prior art investigation, provided opinions on patent validity and non-infringement.
Represented by: Patterson Belknap Webb & Tyler, LLP
Status: Expert Reports and deposition completed 2009. Summary Judgment in favor of Defendant 2010.

IBM v. Amazon.com

Nature of Case: Patent Litigation
Nature of Engagement: Provided expertise in online advertising, database organization and storage systems. . Performed prior art investigation, and infringement mapping for counter suit.
Represented by: Fish & Richardson
Status: Settle with cross licensing of patents

3M Futures South Africa v. STD Bank, MDT telecom

Jurisdiction: South Africa Superior Court, Pretoria
Nature of Case: Patent Litigation
Nature of Engagement: Testified in South Africa for eCommerce technology, Credit Card authentication and transaction authorization.
Represented by: Stema Lubbe, Ltd
Status: Court ruled in favor of all 36 Infringement and Invalidity rebuttal testimony points. Defendant is appealing

ABC v. ENC, Citrix, CISCO, et.al.

Nature of Case: Patent Litigation
Nature of Engagement: Remote control of workstations & Server systems monitors. Video & TV signal controllers. Provide Infringement reports and invalidity rebuttal reports and deposition.
Represented by: Dunlap Codding and Smyser Kaplan & Veselka
Status: Settled 2010

Black Hills v. Samsung, LG, Panasonic, Tosiba

Nature of Case: ITC Patent Litigation
Nature of Engagement: Distributed media management, playlist and network transmission of audio files.
Represented by: Mintz Levin
Status: ITC Hearing – Feb. 2014 – pending judgment

Ronald A. Katz v. Fifth Third Bank (and expert for 5 other defendants)

Nature of Case: Patent Litigation for Call Center, and Telecom technology
Engagement: Expertise in Call center systems and Network routing. Analyze client call center applications, prepare non-infringement and rebuttal reports.
Status: Open
Represented by: Vorys LLP, Wood Herron and Evans.

Professional Experience:**2000 to
Present****Principal Consultant
eComp Consultants****Tampa, FL**

Provide consulting on design and development of software product development, and ecommerce technology. Provide technology consulting and expert support for telecommunications, internet, and ecommerce applications in the areas of:

- Patent portfolio evaluation, market valuation, identification of potential prior art, and licensing opportunities.
- Independent consulting for Alcatel-Lucent (AT&T Bell Labs) to review, recommend, and rate Alcatel's extensive Patent portfolio specifically in the area of telecommunications and web-based ecommerce.
- Patent litigation consulting for telecommunications and internet technology patents.
- Software contract and due diligence consulting for disputes involving custom software projects.
- Internet publishing and copyright consulting for web content management and licensing.
- Commercial websites, search engine, and web marketing strategies.
- Sample clients include: Alcatel-Lucent, LogicLink, NWI Corp, Jones Day, Finnegan Henderson, Fish & Richardson, Cozen O'Connors, Morrison Foerster

2007 to 2008**Global Web Manager
Smith & Nephew Inc.****Clearwater, FL**

Smith & Nephew is a global manufacturer of medical, wound, orthopedic, and surgical supplies. Smith & Nephew has facilities in 33 countries and maintains 35 websites for different product areas and country marketing.

- Designed the Smith & Nephew corporate web architecture for all intranet, extranet, and internet sites.
- Directed a staff of web professionals in developing and managing 35 individual Smith & Nephew websites maintained in the US and 14 countries for both Smith & Nephew clients and internal users.
- Managed and maintain the 650 domains currently owned by Smith & Nephew
- Optimized search engine ranking and website meta tagging.
- Developed corporate technology and IT standards and policies including:
- Created web hosting agreements and IT service contracts (SLAs)
- Defined web development standards
- Researched page ranking, redirection, and domain optimization strategies.

2002 to 2007**eBusiness Director
Eva-Tone Inc****Clearwater, FL**

Eva-Tone is a \$45M commercial multimedia company specializing in ecommerce and marketing solutions, media and content customization, order processing and fulfillment, print & web publishing, CD & DVD manufacturing.

- Set strategic direction of client service offerings in ecommerce and content management.
- Consulted with clients on: web marketing strategy using personalized sales collateral. Defined client profile information to be used to generate customized presentations and brochures.
- Aggressively controlled project scope, managed project timelines, budgets and client expectations.
- Projects proposed and delivered included:

- McGraw-Hill – Enterprise Content Management and automated Web publishing system.
- ProMarine USA – B2B storefront, complex part search, order processing and fulfillment.
- Resource Rabbit – Sales collateral manager. This system retrieves user preferences and client profile information to generate customized electronic presentations and brochures.
- AAA Travel – CRM sales collateral system, instant customized brochures, print-on-demand.

1999 to 2002 **eBusiness Engagement Manager**
Tanning Technology and IMRGlobal

Tanning Technology is an international systems integrator specializing in network infrastructure and channel integration for financial markets and the insurance industry. Proposed and managed eBusiness and Internet infrastructure projects focused on client and user personalization, data mining, and web marketing practices.

Client web engagements proposed and managed:

- Eckerd Pharmacy – Developed eBusiness and web marketing for personalized client web content.
- GEICO – Developed a personalized policyholder web service that uses clients' account history and demographics to customize product literature for cross-sell & up-sell opportunities.
- Hartford Insurance – Integrated 3 tier online claims processing & subrogation with legacy systems
- Citicorp Bank – Designed mortgage and loan payment system; managed sale of loan contracts
- Smith Barney – Developed remote access network infrastructure & wireless PDA financial system
- Medworks – Created medical insurance clearinghouse, MDs centrally process insurance payments

1996 to 1999 **Director of Network & Customer Support**
Utility Partners, Inc.

Tampa, FL

Utility Partners developed and customized utility company software for scheduling service appointments, assigning and routing mobile workforce (field technicians), and dispatching and coordinating resources during power outages.

- Managed client engagement leads for development of client customizations and standardization of product features.
- Setup client support department to manage UP's growing client and product base. This department:
- Provided Network and IT management for over 800 customer users
- Created a 24x7 Helpdesk for Utility dispatch centers and IT departments
- Developed system and network monitors for real-time client system monitoring
- Received trouble calls & provided live client support for the following applications:
 - MobileUP – Mobile Workforce Dispatcher
 - TroubleUP – Power outage manager
 - Smartnom – Web Gas Auction System for private gas auctions
 - CAS – Customer Appointment and Call Center application

1987 to 1996 **Project Manager: Telecom Software**
GTE Data Services (currently Verizon)

Tampa, FL

GTE was an \$8B Telecommunications company and formed the Commercial Services

division to customize their telephone business software to sell to other telephone companies internationally.

- Managed large product implementations for Telecom billing, service order, and Switch management.
- Developed project proposals, and provided client pre-sales support.
- Created project plans, managed resources, and set expectations for customer delivery projects.
- Specific projects managed:
 - Mercury Communication – setup Service Bureau to bill their new intelligent network services.
 - PTT Netherlands – managed \$5M inter-carrier billing project for PTT Netherlands
 - Bell Canada – developed Pricing Plan & Table Management system
 - Deutsche Telekom – designed and developed a German billing prototype system.
 - Received GTE personal best award.

1980 to 1987 Software Engineer / Technical Lead
Digital Equipment Corp.

Maynard, MA

As Technical Lead, led the development of manufacturing automation and control software. Projects Included:

- Supply Chain, CAD/CAM – Designed system to retrieve parts information from circuit board CAD design. Developed a parts ordering system based on expected volumes.
- Pick & place automation – Automatically program IC insertion machines. Developed system to determine IC insertion order, generate machine instructions, and download program to machine.

As Software Engineer for embedded controllers and video subsystems, designed and developed PDP-11 operating system and device drivers.

- Enhanced high-speed DecNet drivers for Synch, Asynch, and Parallel communications.
- Designed/developed disk firmware and drivers for floppy & Winchester disks.
- Developed and enhanced video controller firmware and layered graphics system for PRO-350.
- Developed Computer Telephony Integration (CTI) product for telephone answering machines.

Technical Tools & Environments:

- Unix, Windows, NT, Microsoft .NET, C#, C/C++, VB, Assembler
- Java, Java script, JSP, IBM Websphere, Microsoft Commerce engine, Blue Martini
- SQL, Oracle, Foxpro, DB2, Crystal Reports, Active-Reports, MQ Series, Tuxedo, Documentum, Interwoven

Certifications & Publications:

- Industry Speaker: Internet Publishing standards (Momentum conference)
- Department of Justice: Proposal for internet forensics technology
- IBM Websphere – Certified ecommerce Solutions Expert
- Byte Magazine – Published Network Design articles
- Sync Magazine – Published Programming Techniques and Tutorials
- IEEE SigGraph – Presented ICGS Computer Graphic Standards for IEEE SigGraph conference.

- CMM & PMP – Project management methodologies
- ISO and ANSI – On International ISO and National ANSI Committees for Disk and Media format standards

Non-litigation consulting work:

The following lists the companies for whom I was employed or for whom have consulted for non-litigation matters for at least the last 5 years.

- eComp Consultants – 2001 - present
- Alcatel – Lucent – 2008 - 2011
- Verisign - 2011
- Smith & Nephew – 2001 - 2002
- Evatone, Inc – 2002 - 2007
- McGraw Hill - 2002 - 2006
- AAA Travel – 2004 - 2005
- Pro Marine – 2005 - 2006
- Capitol One – 2007
- Network 1 Security Solutions – 2012 – 2013 – evaluation of call center technologies
- LGreen Deals – 2012 – 2015 – evaluation of technologies and startup companies for investment opportunities
- Vaud Advisors Social Media Technology Funds – 2014 – 2016 – identification and selection of technology startup companies
- 3M Futures South Africa – 2014 – 2016 – Mobile payment authentication
- Logiclink – 2015 – IP evaluation for hotel business kiosks
- Mario Constanze – 2019 – Evaluation of Blockchain and Cryptocurrency technology

Certifications & Publications:

- Industry Speaker: Internet Publishing standards (Momentum conference) – 2006
Publishing high volume content for print and web
- Department of Justice: Proposal for internet forensics technology – 1999
Methods for fingerprinting and detecting copyright material during transmission
- IBM Websphere – Certified ecommerce Solutions Expert - 2000
- Byte Magazine – Published Network Design articles. 1980
- Sync Magazine – Published Programming Techniques and Tutorials 1980-1982
- IEEE SigGraph – Presented ICGS Computer Graphic Standards for IEEE SigGraph conference. 1984
- CMM & PMP – Project management methodologies – 1996 - 1998
- ISO and ANSI – On International ISO and National ANSI Committees for Disk and Media format standards – 1981-1984

Court Testimony Experience:

The following is a list of matters in which I have testified in court in at least the past five years.

- 3M Future Africa (PTY) LTD v. The Standard Bank of South Africa LTD, MTN Group Limited and MTN Mobile Money SA (PTY) LTD, Case #: Patent 2002/2337 (South African High Court) Testifying expert patent infringement and patent validity for the Plaintiff for Online Payments Technology. Bench trial: Testified on the stand for 2.5 days (bench trial). The judge ruled in favor of the Plaintiff on all points of contention for both Infringement and Patent Validity and cited the expert's opinion in each ruling.
- Kenneth Nkosano Makate v Vodacom, Case number: 08/20980 (SOUTH GAUTENG HIGH COURT, JOHANNESBURG, SOUTH AFRICA)

Testifying Expert with Report and Trial Testimony opining on the viability of Makate's concept idea for the "Buzzing Option" that became the "Please Call Me" product; explain other similar concepts used by other service providers and how other business would reward for such a concept that significantly increase revenue and profit for the company. Technology in this case was Unstructured Supplementary Service Data (USSD) a protocol used by GSM cellular telephones to communicate with service provider's computers. USSD can be used for WAP browsing, prepaid callback service, mobile-money services, location-based content services, menu-based information services, and as part of configuring the phone on the network. The judge ruled that Makate should be granted an arbitration hearing to receive compensation for his invention.

- Swapalease, Inc. v. Sublease Exchange.com, Inc., 1:07 CV 00045-SSB (S.D. Ohio 2007)
Expert for Plaintiff on infringement for the Plaintiff. Patent litigation involving online auto leasing technology. Testified at *Markman* Hearing. The judge accepted 3 out of 5 of the Plaintiff's claim constructions.
- Fintech v. iControl Systems, 8:17-cv-00190 (M.D. Florida), filed 1/24/17
Testified on the misappropriation of financial transaction and ecommerce trade secrets for the regulated purchase and sale of alcoholic products. Judge awarded compensatory damages and double punitive damages to the plaintiff.
January 2018 – March 2020
- Logiclink v. Keylink, CV07-1056-DOC(MLGx) (C.D. Cal.)
Patent infringement dispute for the Plaintiff, concerning eCommerce for Kiosks for Hotel Business centers. Bench trial: The judge ruled in favor of, and awarded damages to the client.
- Black Hills Media, LLC v. Samsung, et al. INV# 337-TA-882 [ITC case], filed 5/13/2013
Samsung, LG, Panasonic, Toshiba, Sharp
Testifying Expert on infringement and patent validity for the plaintiff, regarding media streaming, playlists, and geolocation technology. Testified at the ITC hearing. The ITC administrative judges ruled that the accused products did meet the limitation of the claims, but were not in an infringing state at the time of importation.
July 2014-October 2016
- CertusView v. Se@N, 2:13-cv-346 (MSD) (LRL) (E.D. Virginia), filed 5/29/13
Testifying Expert regarding geolocation. U.S. PATENT # 8,265,344, 8,290,204, 8,340,359, 8,407,001, AND 8,532,341. Testifying Expert in inequitable conduct trial concerning impact of undisclosed prior art.
March 2014-March 2016
- LivePerson, Inc. v. 24/7 Customer, Inc., Case No. 4:17-cv-01268-JST (N.D. California), filed 3/10/17; 1:14-cv-01559-RWS (S.D. New York), filed 3/4/14
Testified in an eCommerce and eMarketing regarding the monitoring of user online behavior, online traffic and tracking based on user behavior versus sales conversions.
March 2018 - 2021
- Dynamics Inc. v. Samsung Electronics, Co., Ltd., ITC Inv. No. 337-TA-1170 Filed July 12, 2019
Testified at ITC hearing regarding infringement and validity of mobile and wireless payment technology for emulation of NFC / RFID and MST (Magnetic Secure Transactions) to POS terminals.
July 2019 – 2021

- AnywhereCommerce/BBPOS v. Ingenico, Inc., et al.; Case No: 1:18-cv-05824-MLB (N.D. Georgia) 1:19-cv-11457 (D. Massachusetts), filed 12/20/18
Testifying Expert regarding eCommerce, Wireless Networks, Point-of-Sale devices and transactions
March 2021 – May 2023

Case History:

The following is a list of matters in which I have testified and/or provided expert services (the underlined party identifies which party I was retained by), including all such matters where I have provided written or oral testimony in at least the past five years.

- Progressive v. State Farm, et al. CBM2012-00003 (filed 9/16/12), CBM2013-00004 (filed 10/15/12) (PTAB)
State Farm Insurance, Hartford Insurance, Liberty Mutual Insurance, Safeco Insurance, Ohio Casualty Insurance, Open Seas Solutions, Octo Telematics
Testifying Expert regarding e-Commerce and vehicle telematics systems. Provided Patent Re-exam Declarations.
March 2013 – February 2014
- Black Hills Media, LLC v. Samsung, et al. INV# 337-TA-882 [ITC case], filed 5/13/2013
Samsung, LG, Panasonic, Toshiba, Sharp
Testifying Expert regarding Google Latitude running on smartphones and smart phones running software which can direct the streaming of content between, for example, a laptop and a TV or Blu-ray player. Providing device analysis and code review, Infringement Reports and Rebuttal Reports.
July 2014 – October 2016
- Rembrandt Social Media, LP v. Facebook, Inc. and ADDTHIS, Inc., 1:13cv158 (TSE/TRJ) (E.D. Virginia), filed 2/4/13
Testifying Expert regarding social media user content and 3rd party interaction -the diary page and "Like" feature. Provided Non-Infringement Report and deposition.
May 2013 – June 2014
- Indaon, Inc v. Facebook, Inc. 5:10-cv-966-OLG (W.D. Texas), filed 12/1/10
Testifying Expert regarding automated creation of user-defined hyperlinks in a database. Provided Non-Infringement Report and deposition.
March 2014 – August 2014
- GeoTag, Inc v. Frontier Communications Corp. et al. 2:10-cv-00265 (E.D. Texas) [Multiple cases], filed 7/23/10
Macy's, Genesco, AGCO Corp., The Rockport Company, LLC., Hennes & Mauritz LP (H&M), Gander Mountain Company, Godiva Chocolatier, DSW, National Interlock Systems
Testifying Expert regarding e-Commerce, Geo location, store locator-based technology. Provided Non-Infringement Reports for multiple defendants.
July 2013 – January 2014
- ComplementSoft v. SAS Institute, 12-cv-7372 (N.D. Illinois), filed 9/14/12
Expert regarding software development tools, database manipulation, SAS programming.
March 2013-February 2015
- Media Rights Technologies v. Capital One, et al., 1:13-cv-476-AJT/TRJ (E.D. Virginia), filed 4/19/13
Expert regarding secure internet Banking System technology USPatent# 7316033.
August 2013 – January 2014

- *CertusView v. Se~~ch~~N*, 2:13-cv-346 (MSD) (LRL) (E.D. Virginia), filed 5/29/13
Testifying Expert regarding geolocation. U.S. PATENT # 8,265,344, 8,290,204, 8,340,359, 8,407,001, AND 8,532,341.
MA 2014-DECEMBER 2014

- *Bright Edge v. SearchMetrics*, 4:14-cv-01009 (N.D. California, San Francisco), filed 3/4/14
Testifying Expert regarding search optimization, USPatent# 8478700, USPatent# 8478746.
July 2014 – November 2014

- *Black Hills Media, LLC v. Sonos*, 2:14-CV-00486 SJO (PJWx) (W.D. California), filed 1/21/14
Testifying Expert regarding delivery of stored and streaming audio content over wide-area and local area networks. U.S. PATENT # 6,757,517, 7,236,739, 7,742,740 and 6,826,283
July 2014 – October 2016

- *Yamaha Corp of America v. Black Hills Media, LLC*, 2013-00593, IPR2013-00594, (PTAB), filed 9/18/13
Testifying Expert regarding software which can direct the streaming of content between devices, for example, a laptop and a TV or Blu-ray player. Providing Inter Parties Review Declaration Reports. U.S. PATENT # 8,050,652, 8,045,952
July 2014 – August 2014

- *Samsung Electronics, et al. v. Black Hills Media, LLC*, IPR2014-00737 (filed 5/8/14), IPR2015-00334 (filed 12/3/14), IPR2014-00740 (filed 5/9/14), IPR2015-00340 (filed 12/3/14), IPR2014-00735 (filed 5/7/14) (PTAB)
Testifying Expert regarding software which can direct the streaming of content between devices, for example, a laptop and a TV or Blu-ray player. Providing Inter Parties Review Declaration Reports. U.S. PATENT # 8,050,652, 8,045,952, 6,618,593
July 2014-October 2016

- *GT Nexus v. Intra, Inc.*, 4:11-cv-02145-SBA (N.D. California), filed 5/2/11
Testifying Expert regarding networks & systems used for logistics management. Provided Declaration for CBM petitions. U.S. Patent No. 7,761,387, 7,752,142, 7,827,119, 7,756,794
January 2015 – Sept 2016

- *MyKey Technology, Inc. v. Intelligent Computer Solutions, Inc.*, 2:13-ml-02461-AG (PLAx) MDL NO. 2461 (C.D. California, Southern Division), filed 8/16/13
Testifying Expert regarding hard drives and other mass storage devices, how to access "hidden" storage and cleaning a disk. Provided Validity Rebuttal and MSJ Declaration. U.S. Patent No. 6,813,682, 7,228,379
March 2015 – June 2015

- *Biosignia Inc. v. Life Line Systems*, 1:12-cv-01129-UA-JEP (M.D. North Carolina), filed 10/22/12
Testifying Expert regarding Contract Dispute concerning Health Risk Assessment System.
July 2015 – January 2016

- *Versata Software, Inc. et al. v. Callidus Software Inc.*, C.A. No. 1:10-cv-00781-SLR (D. Delaware), filed 9/14/10
- *Versata Software, Inc. et al. v. Callidus Software Inc.*, C.A. No. 1:12-cv-00931-SLR (D. Delaware), filed 7/19/12
Testifying Expert regarding expertise in sales force automation, workflow analysis, process automation, event management and detection, rules-based systems. Provided analysis for infringement report.
August 2014 – November 2014

- *BuySafe v. Google*, 3:13-cv-00781-HEH (E.D. Virginia), filed 11/25/13

Testifying Expert regarding patent litigation concerning eCommerce specifically to determining the efficacy (effectiveness, strength, success, etc.) of offers that are related to online transactions. The efficacy is determined based on a user's actions in the online environment.

May 2014 – September 2014

- *Phoenix v. General Motors*, 2:13-cv-1093 (E.D. Texas), filed 12/11/13

Testifying Expert regarding patent litigation concerning US Patent 5,987,434 - Apparatus and method for transacting marketing and sales of financial products, US Patent 7,890,366 - Personalized communication documents, system and method for preparing same, US Patent 8,352,317 - System for facilitating production of variable offer communications.

May 2015 – August 2015

- *Macropoint v. FourKites*, 1:15-cv-01002 (N.D. Ohio), filed 5/19/15

Testifying Expert regarding patent litigation concerning U.S. Pat. Nos. 8,604,943, 9,070,295, 9,082,097, 9,082,098, and 9,087,313. At a very high level, the patents are directed to methods and systems for monitoring and tracking the location of a vehicle or freight in transit. Evaluated the claims of the asserted patents to opine on whether the claims are: 1) directed to an abstract idea, and 2) in the event the court would find the claims directed to an abstract idea, how the limitations of the claims transform that abstract idea into patentable subject matter based on the Supreme Court Alice decision being barely a year old.

August 2015 – September 2015

- *Macropoint, LLC v. Ruiz Food Products, Inc.*, 6:16-cv-1133-RSW-KNM (E.D. Texas, Tyler Division), filed 8/30/16

Testifying Expert regarding patent litigation.

October 2017 – May 2018

- *Longitude v. Apple*, 3:14-cv-04275 (N.D. California, San Francisco), filed 9/23/14

Testifying Expert regarding patent litigation concerning Flash Memory Technology. Provided claim construction support.

April 2015 – February 2016

- *Global Tel Link Corp. v. Securus Technologies, Inc.*, CBM2015-00145 (PTAB), 5/19/15

Testifying Expert regarding a CBM concerning the 7,860,222-patent titled “Systems and Methods for Acquiring, Accessing, and Analyzing Investigative Information,” generally directed to acquiring, accessing, and analyzing investigative information or phone call monitoring using speech recognition/transcription of inmates within a jail.

October 2015 - December 2015

- *Global Tel Link Corp. v. Securus Technologies, Inc.*, IPR2015-01222 (PTAB), filed 5/19/15

Testifying Expert regarding an IPR concerning the patent 8,750,486 titled “Call Center for offering goods and services to an inmate population,” generally directed to acquiring, accessing, and analyzing investigative information or phone call monitoring using speech recognition/transcription of inmates within a jail.

January 2016 – May 2016

- *Global Tel Link Corp. v. Securus Technologies, Inc.*, IPR2015-01225 (PTAB), filed 5/19/15

Testifying Expert regarding an IPR concerning the patent 8,886,663 titled “Multi-party Conversational analyzer and logger,” generally directed to acquiring, accessing, and analyzing investigative information or phone call monitoring using speech recognition/transcription of inmates within a jail.

January 2016 – June 2016

- *CaptionCall v Ultratec, Inc.*, IPR2015-01355 (5,974,116) (filed 6/8/15), IPR2015-01357 (6,934,366) (filed 6/8/15), IPR2015-01358 (7,006,604) (filed 6/8/15), IPR2015-01359 (6,493,426) (filed 6/8/15), IPR2015-00636 (8,917,822) (filed 1/29/15), IPR2015-00637 (8,908,838) (filed 1/29/15) (PTAB)
Testifying Expert regarding IPRs concerning call routing/switching that happens when a deaf or hearing-impaired individual makes a phone call.
October 2015 -March 2017

- *Centrak, Inc. v Sonitor Technologies, Inc.*, 1:14-cv-183-RGA (D. Delaware), filed 2/12/14
Testifying Expert regarding patent litigation concerning an application on a smart phone which allows a person to walk into a hospital, have infrastructure pick up patient information and send it to say, an MRI office, so office is ready for the patient when patient arrives. Expertise in low energy blue tooth and way finding and Ultrasonic Tags communicate with Stations. Provided infringement report and invalidity rebuttal.
February 2016 – May 2018

- *Intellectual Ventures II LLC v. T-Mobile USA, Inc., et al.*, C.A. No. 1:13-cv-1633-LPS (D. Delaware), filed 10/1/13;
Intellectual Ventures II LLC v. Nextel Operations, et al., (on behalf of Sprint) C.A. No. 1:13-cv-1635-LPS (D. Delaware), filed 10/1/13;
Testifying Expert regarding non-infringement of US Patent No. 6,115,737 and the 5,339,352 concerning accessing customer contact services over a network and a Directory assistance call completion via mobile systems.
March 2016 – October 2016

- *Askeladden LLC v. N5 Technologies LLC* IPR2017-00083 – 7,197,297 (PTAB), filed 10/14/16;
Testifying Expert regarding IPR of US Patent No. 7,197,297 concerning mobile messaging and authentication of mobile device users.
September 2016 – January 2018

- *Askeladden LLC v. Verify Smart Corp.* IPR2017-00726 – 8,285,648 (PTAB), filed 1/18/17;
Testifying Expert regarding IPR of US Patent No. 8,285,648 concerning electronic transactions and authentication of customers using mobile devices.
November 2016 – February 2018

- *Askeladden LLC v. Digital Verification* IPR2018-00745 – 9,054,860 (PTAB), filed 3/6/18;
Testifying Expert regarding patent litigation.
December 2017 – March 2018

- *Infinity Computer Products, Inc. v. Toshiba America Business Solutions, Inc.*, 2:12-cv-06796-NIQA (E.D. Pennsylvania), filed 12/5/12
Testifying Expert.
November 2017 – May 2018

- *IXI Mobile (R&D) LTD. and IXI IP, LLC v. Blackberry Limited, et al.*, 2:15-cv-01883-JRG-RSP (E.D. Texas, Marshall Division), filed 11/25/15
Testifying Expert.
July 2016 – October 2016

- *Financial Information Technology v. Mark Lopez*, 8:15-cv-02784-T-30AEP (M.D. Florida), filed 12/3/15
Payment processing system, Trade Secrets, Breach of Contract
November 2016 – May 2017

- Fintech v. iControl Systems, 8:17-cv-00190 (M.D. Florida), filed 1/24/17
Testifying Expert.
January 2018 – March 2020
- Alexsam, Inc. v. Green Dot Corporation, Next Estate Communications, Inc., and Does 1 through 10, inclusive, Case No 2:15-cv-05742 CAS(PLAx) (C.D. California, Western Division), filed 7/29/15
Testifying Expert.
January 2017 – July 2017
- Wex Health, Inc. v. Alexsam, Inc., Case No 2:17-cv-00733-RWS-RSP (E.D. Texas, Marshall Division), filed 11/8/17
Testifying Expert.
May 2018 – January 2019
- Bank of the West v. Trisport.com L.L.C., and Seton Claggett and Deborah Claggett, Case No C2013-1286 (Superior Court of Arizona), filed 2013
eCommerce, eMarketing, Internet Sales, Fulfillment and traffic statistics
November 2016 – May 2017
- Noble Systems Corp. v. Kabbage, Inc., JAMS Arbitration No: 14400004993 (Atlanta, Georgia), filed 2016
High Volume Call Center Requirements, Call Center Industry practices
November 2016 – February 2017
- ComplementSoft LLC v. SAS Institute Inc., 1:12-cv-07372 (N.D. Illinois), filed 9/14/12
Testifying Expert.
April 2013 – February 2015
- Intellectual Ventures II LLC v. T-Mobile USA, Inc., et al, C.A No 1:13-cv-1635-LPS (D. Delaware), filed 10/1/13; Intellectual Ventures II LLC v. Nextel Operations, et al, C.A No 1:13-cv-1635-LPS (D. Delaware), filed 10/1/13; Intellectual Ventures II LLC v. United States Cellular Corp., C.A No 1:13-cv-1637 (D. Delaware), filed 10/1/13
Testifying Expert.
March 2016 – November 2016
- ConnectSoft, Inc. v. NEEO Inc., Case No. 2:16-cv-00548-JRG (E.D. Texas, Marshall Division), filed 5/23/16
Testifying Expert.
January 2017
- LivePerson, Inc. v. 24/7 Customer, Inc., Case No. 4:17-cv-01268-JST (N.D. California), filed 3/10/17; 1:14-cv-01559-RWS (S.D. New York), filed 3/4/14
Testifying Expert.
March 2018 - Current
- Performance Price Holdings, LLC and its affiliates (PPH) v. Google LLC, 1:15-cv-09712-LGS (S.D. New York), filed 12/11/15 – 0:2018bcaag01189; 0:2018bcaag01191 (U.S. Court of Appeals, Federal Circuit - CBM2016-00050 for Patent No. 8,799,059, CBM2016-00049 for Patent No. 7,089,195
Testifying Expert.
October 2015 – March 2017
- Free Stream Media Corp. d/b/a Samba TV v. Alphonso, Inc., 3:17-cv-02107 (N.D. California), filed 4/19/17
Testifying Expert

February 2017 – October 2018

- *TicketNetwork, Inc. et al. v. CEATS, Inc.*, Case Nos. IPR2018-00244 (filed 11/27/17) and IPR2018-00245 (filed 11/28/17) (PTAB);

Testifying Expert regarding patent litigation

September 2018 – December 2018

- *CG Technology Development, LLC et al v. DraftKings, Inc.*, Case No. 2:16-cv-00781 (D. Nevada), filed 4/7/16;
- *CG Technology Development, LLC et al v. FanDuel, Inc.*; Case No. 2:16-cv-00801 (D. Nevada), filed 4/8/16;
- *CG Technology Development, LLC et al. v. 888 Holdings PLC*, Case No. 2:16-cv-00856 (D. Nevada), filed 4/14/16;
- *CG Technology Development, LLC et al v. Big Fish Games, Inc.*, Case No. 2:16-cv-00857 (D. Nevada), filed 4/14/16;
- *CG Technology Development, LLC et al v. Double Down Interactive, LLC*, Case No: 2:16-cv-00858 (D. Nevada), filed 4/14/16;
- *CG Technology Development, LLC et al v. Zynga, Inc.*, Case No: 2:16-cv-00859 (D. Nevada), filed 4/14/16;
- *CG Technology Development, LLC et al v. Bwin.Party Digital Entertainment, PPLC et al*, Case No: 2:16-cv-00871 (D. Nevada), filed 4/15/16;

Testifying expert on network gaming, gaming interfaces, and wagering strategies. Performed code reviews and infringement contentions for all defendants.

June 2017 - Current

- *Great West Casualty Company, Bitco General Insurance Corporation and Bitco National Insurance Company v. Intellectual Ventures II, LLC.*, Case NO. IPR2015-01706, U.S. Patent 7,516,177 (PTAB), filed 8/12/15
- April 2019 – June 2019

- *Uniloc v Autodesk*, 2:15-cv-01187 (E.D. Texas), filed 6/30/15
- Consulting Expert regarding non infringement of US Patent No 7783,523 & 8,515,820 concerning systems that facilitated the pricing of construction projects.
- February 2017 – July 2017

- *Bellsouth v American Infoage, Sago Data Center*, Case No: 14-A-07233-1 (Superior Court of Gwinnett County Georgia), file 2014
- Consulting Expert regarding contract dispute where Bellsouth claims they are entitled to easement / free space and power in Sago Data Center. Providing consulting expertise on telecommunication acts, and LEC / CLEC regulation and Data Center practices.
- August 2015 – September 2015

- *Karamelion, LLC. v. AT&T Digital Life, Inc.*, Case No. 2:18-cv-331-JRG (E.D. Texas), filed 8/1/18
- Closed 9/5/2019
- *Rpost Holdings, Inc et al v. DocuSign, Inc.*, Case No: 2:12-cv-00683-JRG (E.D. Texas), filed 10/25/12
- January 2019
- *Paid Easy Corp. d/b/a Paideasy v. Mastercard International Incorporated d/b/a Mastercard*, Index No: 63152/2017 (Supreme Court of New York County of Westchester); filed 2017
- Mobile Payments, Point of Sale Integration, Trade Secrets
- March 2019
- *International Business Machines Corporation (IBM) v. Expedia, Inc.*, Case No: 1:17-cv-01875-LPS CJB (D. Delaware), filed 12/29/17

Pre-internet partitioned apps w/ Advertising, HTTP state and cookies, single sign-on
May 2019 – July 2019

- irth Solutions, LLC v. Apex Data Solutions and Service, LLC et al, Case No: 6:18-cv-06884 (W.D. New York), filed 12/6/18
Utility Location systems, Locator and Dig tickets, Trade Secrets
May 2019 -June 2021
- CG Technology v. William Hill U.S. Holdco, Inc. and Brandy Wine Bookmaking LLC, Case No: 1:18-cv-00533 (D. Delaware), filed 4/10/18
Location Determination, Gaming, User Verification/ Age detection
April 2019 – September 2020
- Microchip Technology Inc. v. Delphi Automotive Systems, LLC, Case No: 1:17-cv-01194-LPS-CJB (D. Delaware), filed 8/24/17
Peripheral and Devices interfaces, Multi-drop/Multi-host USB and Communications Protocols
February 2018 – current
- Uniloc USA, Inc. et al. v. Motorola Mobility, LLC, Case No: 1:17-cv-1658 (D. Delaware), filed 11/15/17
CTI, Configurable Telephony appliances, Device interface protocols
October 2018- January 2019
- Ubiquitous Connectivity LP v. TXU Energy Retail Company, LLC, Case No: 3:18-cv-02084 (N.D. Texas), filed 8/10/18
Distributed Appliance monitoring and control, Multi-hop mesh networks
October 2018 – January 2019
- Digital Media Technologies, Inc. v. Amazon.com, Inc., Case No: 0:2017cvpri02409; Digital Media Technologies, Inc. v. Hulu, LLC, Case No: 0:2017cvpri02410; Digital Media Technologies, Inc. v. Netflix, Inc., Case No: 0:2017cvpri02408 (U.S. Court of Appeals, Federal Circuit), filed 8/9/17
Media Distribution, Digital Rights Management, Media License Encryption
March 2018 – November 2018
- Implicit, LLC v. Sandvine Corporation, Case No: 2:18-cv-00054 (E.D. Texas), filed 3/8/18; Implicit, LLC v. NETScout Systems, Inc., Case No: 2:18-cv-00053 (E.D. Texas), filed 3/8/18
October 2018
- Alexsam, Inc. v. Mastercard International Inc. Case No: 1:15-cv-02799(E.D. New York), filed 5/14/15
Point-of Sale, Multifunction Card Activation, Transaction processing
January 2017- Current
- Alexsam, Inc. v. Cigna Corporation et al, Case No: 2:20-cv-00081 (E.D. Texas), filed 4/30/20
eCommerce, Banking Networks, Point-of-Sale devices and transactions
February 2021- Current
- Alexsam, Inc. v. UMB Financial Corp. Case No: 2:20-cv-00082 (E.D. Texas), filed 3/18/20
eCommerce, Banking Networks, Point-of-Sale devices and transactions
April 2021- Current

- Alexsam, Inc. v. Simon Property Group L.P., Blackhawk Network, Inc., American Express Travel Related Services Company, Inc., U.S. Bank, N.A.; Case No: 2:2019-cv-00331 (Texas Eastern District Court); filed 10/11/2019
Testifying expert for payments systems, multifunction credit cards, and point of sale systems
- Alexsam, Inc. v. WageWorks, Inc.; Case No: 3:2019-cv-04538 (California Northern District Court); filed 8/2/2019
Testifying expert for payments systems, multifunction credit cards, and point of sale systems
October 2019 – December 2020
- Alexsam, Inc. v. Aetna Inc.; Case No: 3:2019-cv-01025 (Connecticut District Court); filed 6/18/2019
Testifying expert for payments systems, multifunction credit cards, and point of sale systems
April 2019
- SiteLock LLC v. Comodo Holdings Limited et al., Case No: 2:17-cv-04080 (D. Arizona), filed 11/3/17
Website Security, Online Trust System, 3rd Party Validation/Transaction Authentication
July 2018- Sept 2018
- Tamabo, Inc. v. Koninklijke Philips N.V., Case No: 2:17-cv-00750 (E.D. Texas), filed 11/21/17
June 2018 – September 2018
- Energy Intelligence Group, Inc. et al v. Mizuho Bank, Ltd, Case No: 1:17-cv-01508 (S.D. New York), filed 2/28/17
ePublishing, Copyright, Digital Rights Management
July 2018- August 2018
- Keynetik, Inc v. Samsung Electronics Co., Ltd and Samsung Electronics America, Inc., Case No: 2:17-cv-02794 (D. New Jersey), filed 4/24/17
Fleet Management, Geolocation, Accounting
September 2017 – June 2018
- Edible International, LLC et al v. Google, LLC, Case No: 3:18-cv-00216 (D. Connecticut), filed 2/5/18
Search Engine Optimization, eMarketing, Geo & Location based Search
May 2018
- Re/Max, LLC v. Quicken Loans, Inc., Case No: 1:16-cv-02357 (D. Colorado), filed 9/19/16
eCommerce Contract disputes, eMarketing, Financial Products, Commercial Websites
May 2018
- Fantasy Interactive Inc. v. HTC Corporation, Case No: 2:16-cv-01720 (W.D. Washington), filed 11/4/16
Industry standards for Website development and software project management
January 2018 – April 2018
- Noble Systems Corp., v. AGR Group, LLC, Case No: 8:16-cv-03406 (M.D. Florida), filed 12/14/16
Call Center Operations, Software Licensing
December 2016 – May 2017
- PaySys International, Inc v. Atos Se, et al cases, Case No: 1:14-cv-10105 (S.D. New York), filed 12/23/14
Credit Card Business Process, Copyright, Code review
July 2016 – April 2017

- *IBM v. Amazon.com*, Case No: 9:06-CV-242 (E.D. Texas), filed 10/26/06
May 2019 – Current
- *Dynamics Inc. v. Samsung Electronics, Co., Ltd.*, ITC Inv. No. 337-TA-1170 Filed July 12, 2019
Testifying expert for mobile and wireless payment technology for emulation of NFC / RFID and MST (Magnetic Secure Transactions) to POS terminals.
July 2019 – 2021
- *Dynamics Inc. v. Samsung Electronics, Co., Ltd.*, Case No. 1:19-cv-06479 (S.D. New York), filed 7/12/19
Testifying expert for mobile and wireless payment technology for emulation of NFC / RFID and MST (Magnetic Secure Transactions) to POS terminals. July 2019 – 2021
April 2019 - current
- *AnywhereCommerce v. Square* IPR2019-01625, IPR2019-01627, IPR2019-01629, IPR2019-01649, IPR2019-01650, IPR2019-01651, IPR2019-01652, IPR2019-01653, IPR2019-01654 (PTAB), filed 9/30/19
Mobile/Wireless Point of Sale Data Communications. Financial and Card transactions
July 2019 - current
- *Merck & Co., Inc et al v. Merck KGAA*; Case No. 2:16-cv-00266 (D. New Jersey), filed 1/15/16
Use of Tradenames within a Domain/Area, Web Analytics, Geofencing, Geo-Blocking, Search Engine behavior
June 2019 – August 2019
- *Arendi S.A.R.L. v. Google LLC*, 1:13-cv-919-LPS; *Arendi S.A.R.L. v. Oath Holdings Inc. et al.*, 1:13-cv-920-LPS; *Arendi S.A.R.L. v. Microsoft Mobile Inc.*, 1:12-cv-1599-LPS; *Arendi S.A.R.L. v. Apple Inc.*, 1:12-cv-1596-LPS; *Arendi S.A.R.L. v. LG Electronics Inc., et al.*, 1:12-cv-1595-LPS; *Arendi S.A.R.L. v. Sony Mobile Communications (USA) Inc., et al.*, 1:12-cv-1602-LPS; *Arendi S.A.R.L. v. Blackberry Ltd., et al.*, 1:12-cv-1597-LPS, all pending in the United States District Court for the District of Delaware; and *Arendi S.A.R.L. v. HTC Corp. et al.*, 2:18-cv-1725-BJR, pending in the United States District Court for the Western District of Washington.
User-device interfaces, smart lookup, auto completion technology
August 2019 – February 2020
- *Digital Retail Apps. Inc., v. HEB Grocery Company, LP*; Case No: 6:19-cv-00167 (W.D. Texas), filed 2/20/19
Wireless POS and payment devices, secure payment authorization, dynamic token generation
August 2019 – Current
- *NICE Ltd. et al v. CallMiner Inc.*; Case No: 1:2018cv02024 (Delaware District Court), filed 12/19/2018
Call Center, Call and Event recording, Speech and Data analysis
July 2020 – August 2021
- *Oanda Corporation v. Gain Capital Holdings, Inc. et al*; Case No: 3:20-cv-05784 (D. New Jersey), filed 5/11/20
Financial & Trading Systems, Currency Exchange, Financial transaction
July 2020 – Current

- Oanda Corporation v. StoneX Group, Inc.; Case No: 1:20-cv-07785 (N.D. Illinois), filed 12/30/20
eCommerce, Financial Transactions, eTrading
March 2021 – Current
- AnywhereCommerce/BBPOS v. Ingenico, Inc., et al.; Case No: 1:18-cv-05824-MLB (N.D. Georgia) 1:19-cv-11457 (D. Massachusetts), filed 12/20/18
eCommerce, Wireless Networks, Point-of-Sale devices and transactions
March 2021 – Current
- Flightdocs II, LLC v. Traxxall Services, Inc., and Dawn King; Case No: 19-ca-006797 (Lee County Florida), filed 10/14/19 – Trade Secrets
ERP Systems, Facility Management and Equipment Maintenance
April 2021 – Current
- Alorica, Inc v. Fortinet, Inc.; Case No: 19CV344971 (Superior Court of California, County of Santa Clara), filed 10/21/2020
Call Center Network Communications, VoIP, Routing, Breach of Contract, SD-WAN
December 2020 – Current
- Drips Holdings, LLC v. Teledrip LLC, et al.; Case No: 5:2019-cv-02789 (Ohio Northern District Court) filed 1/26/2019
Conversational Market technology, Natural language recognition, eMarketing
September 2021 - Current
- Island Intellectual Property LLC v. TD Ameritrade, Inc. et al., Case No, 2:21-cv-273 (E.D. Tex.) filed July 20, 2021
Banking and Financial transactions, Aggregate deposit, Sweep Accounts
October 2021 - Current
- Digital Retail App Inc. v. Sam's Club West, Inc. d/b/a Sam's Club; Case No. 2:21-CV-00184-JRG-RSP (E.D. Tex.), filed 5/26/2021
Wireless POS and payment devices, secure payment authorization, in-store self-payment
August 2021 – March 2022
- ClearDoc, Inc. v. RiversideFM, Inc., Case No. 1:2021-cv-01422 (Delaware District Court) filed 10/6/2021
Mobile communication, Media recording and transmission protocols
September 2021 – Current
- B.E. Technology, LLC v. Google, LLC; Case No: 1:2020-cv-00622 (Delaware District Court); B.E. Technology, LLC v. Twitter, Inc.; Case No: 1:2020-cv-00621 (Delaware District Court) Patent Nos: 8,549,410, 8,549,411 and 8,769,440
Targeting Advertising from Content tagging/Keywords (Device id, location, content, and keyword history)
May 2020 – Current
- Semafone Limited and Semafone, Inc., v. PCI PAL (U.S.) Inc., Case No: 3:2021-cv-00486 Western District Court of N. C.); filed 9/15/2021

Call signal processing, CTI/Computer telephony integration, Call center payment transactions
November 2021 - Current

- Applications In Internet Time, LLC v. Salesforce.com; Case No. 3:13-cv-00628-RCJ-VPC (Nevada District Court); filed 11/8/2013
Multi-tenancy call centers, Client/Server/Browser based app design, Dynamic generation of app and UI, Automated change management
October 2021 – September 2023
- Droplets, Inc. v. Yahoo! Inc.; Case No: 12-cv-04047-JST; Droplets, Inc. v. Nordstrom, Inc. Case No: 12-cv-04049-JST (N.D. Court of California); filed 8/1/2012
Web Marketing, Analytics, eCommerce systems, GUI & Web Metrics
Case resulted in 15 million dollar settlement for Droplets client
November 2020 – April 2023
- General Video v. Vivo Technologies Sdn Bhd; Case No: WA-22IP-80-12/2020 (High Court of Malaya at Kuala Lumpur)
Compressed video transmission & synchronization, MPEG, ISO 13818
November 2021 – Current
- Epic Tech, LLC v. Fusion Skill, Inc., et al; Case No: 4:2019-cv-02400 (Texas Southern District Court); filed 7/3/2019
Online Gaming, Sweepstakes, Game payout, Patent & Trade Secrets
June 2020 - Current
- Epic Tech, LLC v. Penn-Tech Associates, Inc.; Case No: 1:2020-cv-02428 (Georgia Northern District Court); filed 6/5/2020
Online Gaming, Sweepstakes, Game payout, Patent & Trade Secrets
September 2020 – Current
- Askeladden LLC v. Mobile Equity Corp.; Patent No. 10,535,058 and 8,589,236(PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
November 2021 – Current
- Askeladden LLC v. Electronic Receipts Delivery Systems, LLC; Patent No. 10,535,058 and 8,589,236(PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
February 2020 – Current
- Askeladden LLC v. Authwallet LLC; Patent No. 8,280,776 (PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
August 2020 – Current
- Askeladden LLC v. eCredit Solutions LLC; Patent No. 8,788,353 (PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
November 2020 – Current
- Askeladden LLC v. Xylon Licensing LLC; Patent No. 8,719,165 (PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
January 2021 – Current

- Askeladden LLC v. AML IP LLC; Patent No. 6,876,979 (PTAB)
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
September 2021 – Current
- Askeladden LLC v. Kioba Processing LLC; Patent No. 7,110,792 B2
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
July 2022 - Current
- Askeladden LLC v. Liberty Peak Ventures LLC; Patent No. 7,837,100 B2 and 8,905,301 B2
Testifying Expert on Payment transactions, Point of Sale, and Authentication systems
November 2022 – Current
- CoolTVNetwork.com, Inc. v. Facebook, Inc.; Case No: 19-292-LPS-JLH; CoolTVNetwork.com, Inc. v. International Business Machines Corp.; Case No: 19-293-LPS-JLH; CoolTVNetwork.com, Inc. v. Limelight Networks, Inc.; Case No: 19-292-LPS-JLH; CoolTVNetwork.com, Inc. v. Microsoft Corp.; Case No: 19-296-LPS-JLH; CoolTVNetwork.com, Inc. v. Ooyala Inc.; Case No: 19-297-LPS-JLH; CoolTVNetwork.com Inc. v. SNAP Inc.; Case No: 19-534-LPS-JLH; CoolTVNetwork.com Inc. v. Trapelo Corp.; Case No: 19-535-LPS-JLH (District of Delaware); filed 2/11/2019
Media Hotspot/hyperlink actions, User interface for eCommerce activities (shop, bid, interact)
October 2020
- Business Solutions, LLC v. Banir Ganatra et al.; Case No: 8:2018-cv-01426 (California Central District Court); filed 8/10/2018
Search Engine Optimization, Market Segmentation, eMarketing economics and ROI, Trade Secrets
October 2019 – March 2022
- Energy Intelligence Group, Inc. et al v. Lazard Freres & Co. LLC; Case No: 4:2018-cv-02241 (Texas Southern District Court); filed 6/28/2018
Testifying expert for copyright infringement for online subscription and distribution licenses
June 2019 -October 2019
- MQ Gaming, LLC et al. v. LEGO Systems, Inc. et al.; Case No: 1:2019-cv-00905 (Delaware District Court); filed 5/14/2019
Video game controllers, Joystick design and mfg., User Interface
November 2020 -March 2021
- Kenneth Nkosana Makate v. Vodacom (PTY) LTD; Case No:08/20980 (South Gauteng High Court, Johannesburg)
Testifying expert regarding the technology valuation of call back notification messaging
May 2013 – March 2019
- Island Intellectual Property LLC, Lids Capital LLC, Double Roock Corporation and Intrasweep LLC, v. Deutsche Bank Trust Company Americas, and Total Bank Solutions, LLC; Case No: 09Civ. 2675(VM)(ALP) (Southern District Court of New York); filed 3/24/2009
Provide expertise in bank transactions for Sweep Accounts, including features for interest bearing, FDIC insured, Omnibus accounts. Provided expert infringement & invalidity report and Deposition
September 2009 – February 2012
- Parus Holdings, Inc. v. Capital One Bank (USA) N.A., Case No. 2:21-cv-0395-JRG (E.D. Texas); filed 10/22/2021
Telecom speech recognition, Natural language speech recognition, IVR voice commands

February 2022 – Current

- *Parus Holdings, Inc. v. Bank of America Corp.*, Case No:2:21-cv-00394 (E.D. Texas); filed 10/22/2021
Telecom speech recognition, Natural language speech recognition, IVR voice commands
July 2022 – February 2023
- *Stylitics, Inc. v. FindMine, Inc.*; Case No: 1:2022-cv-02983 (S.D. of New York); filed 4/11/2022
Online Retail Systems, Purchase recommendations, Shopping Experience
August 2022 – current
- *Q Technologies, Inc. v. Walmart, Inc.*; Case No: 6:2021-cv-00779 (D.C. of Texas Western); filed 7/29/2021
Retail POS systems, Payment Systems, Data/Content sharing and distribution
September 2022- Current
- *CloudofChange, LLC v. Lightspeed POS Inc.*; Case no. 6:2021-cv-01102 (W.D. Texas), filed 10/22/2021
Web-based Point of Sale, Configurable POS terminals, Subscription SAS services
April 2023 - Current
- *Blaze Mobile v. Samsung -Patent Reexam*
Patent Nos: 10,825,007; 10,699,259
Mobile Targeted Advertising, eCommerce Online Transactions, POS NFC transactions
April 2023 - Current
- *Result Marketing Group, Ltd v. Southeastern Grocers, LLC et al*; Case no: 3:2021-cv-00611 (M.D. of Florida);
filed 6/17/2021
Trade Secrets, eMarketing, Outsourcing for centralizing media opportunities
January 2023 - Current
- *Sony Group Corporation et al v. inMusic Brands, Inc.*, IPR2023-00294 (PTAB)
filed 12/1/2022
Patent No: 7,567,498 B2,
Audio Signal Encoding, Media transmission, Media Players
October 2023 - Current