

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG ELECTRONICS
AMERICA, INC.

Petitioner,

v.

KP INNOVATIONS 2, LLC,
Patent Owner.

PTAB Case No. IPR2025-00101

Patent No. 10,499,168

**DECLARATION OF DR. THEOGARAJAN
IN OPPOSITION TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,499,168**

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TABLE OF DECLARATION EXHIBITS AND APPENDIX

Exhibit	Title
1001	U.S. Patent No. 10,499,168 to Robert Glen Klinefelter <i>et al.</i> (“’168 Patent”)
1002	U.S. Provisional Patent Application 60/243,162, Robert Glenn Klinefelter et al. (“’162 Provisional Patent Application”)
1003	Prosecution History of U.S. Patent No. 10,499,168
1004	Declaration of Dr. Sandeep Chatterjee (“ <i>Chatterjee</i> ”)
1005	Curriculum Vitae of Dr. Sandeep Chatterjee
1006	U.S. Patent No. 5,808,663 to Ken Okaya (“ <i>Okaya</i> ”)
1007	U.S. Patent No. 6,782,281 to Naokazu Nagasawa (“ <i>Nagasawa</i> ”)
1008	PCT International Patent Publication No. WO 01/31893 to Esa Harma (“ <i>Harma</i> ”)
1009	KP2’s Infringement Contentions (served September 24, 2024), KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. et al., No. 1:24-cv-00170 (W.D. Tex. Feb. 19, 2024)
1010	UK Patent Application Publication No 2,358,985 to Tetsuya Kubo et al. (“Kubo”)
1011	Claim listing for Challenged Claims of U.S. Patent No. 10,499,168.
1012	Complaint, <i>KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. et al.</i> , No. 1:24-cv-00170 (W.D. Tex. Feb. 19, 2024)
1013	Scheduling Order, KP2 Innovations 2, LLC, v. Samsung Electronics Co., Ltd. <i>et al.</i> , Dkt. No. 27, No. 1:24-cv-00170 (W.D. Tex. Feb. 19, 2024)

1014	“Access” definition. The American Heritage® College Dictionary (2000)
1015	“ <i>Mobile telephone</i> ” definition. <i>Telephony’s Dictionary</i> (2nd Ed.1986)
1016	“Mobile phone” definition. <i>The Focal Illustrated Dictionary of Telecommunications</i> (1999)
1017	Bob Summers, <i>Official Microsoft NetMeeting Book</i> , Microsoft Press (1998)
1018	Norman E. Sondak, Eileen M. Sondak, “ <i>Video Conferencing: The Next Wave for International Business Communication</i> ,” Ann. Conf. on Language and Comm. For World Business and the Professions (April 6-8, 1995)
1019	Certified Translation of Japanese Patent Publication JPH11298869, Kazuhiro Takahasi <i>et al</i>
1020	Dell™ Latitude™ CPx H-Series/J-Series User’s Guide, Initial Release November 15, 1999, Last Revision August 28, 2000, available at https://www.dell.com/support/home/en-us/productsupport/product/latitude-cpx-h/docs
1021	“ <i>PC Card Technology Primer</i> ,” Personal Computer Memory Card International Association, October 22, 2000, available at https://web.archive.org/web/20001022131519/http://www.pcmcia.org/pccard.htm
1022	“ <i>The Zoomed Video Port for PC Cards</i> ,” Personal Computer Memory Card International Association, July 8, 2000, available at https://web.archive.org/web/20000708043950/http://www.pcmcia.org/papers/zv.htm
1023	David G. Messerschmitt, “ <i>Convergence of Telecommunications with Computing</i> ,” Technology in Society, Vol. 18, No. 3, pp. 285-86 (1996)

1024	Mirza M. Luqman et al., “ <i>Globalization of Wireless Telephone</i> ,” Portland International Conference on Management of Engineering and Technology, July 29, 2001-August 2, 2001
1025	“ <i>System Specifications: Latitude CPx</i> ,” www.dell.com (archived March 1, 2000), available at https://web.archive.org/web/20000301021538/http://www.dell.com/us/en/bsd/products/spec_latit_cpx_notebooks.htm
2001	Declaration of Dr. Luke Theogarajan
2002	“ <i>‘I See What You Mean’: The Role of Kinesic Behaviour in Listening and Implications for Foreign and Second Language Learning</i> ,” Applied Linguistics, Volume 13, Issue 3, September 1992, Pages 239-258, available at https://doi.org/10.1093/applin/13.3.239
2003	“A complete history of the camera phone,” Simon Hill, May 13, 2022, available at https://www.digitaltrends.com/mobile/camera-phone-history/
2004	Notice of Order in Case 1:24-CV-00170-ADA KP Innovations 2, LLC v. Samsung Electronics Co., Ltd. et al Order Reassigning Case to Judge Alan D. Albright for all proceedings

Appendix

Curriculum Vitae of Dr. Luke Theogarajan

I, Dr. Luke Theogarajan, declare as follows:

I. INTRODUCTION

1. I am employed by the University of California, Santa Barbara, where I am the Chair of the Department of Electrical & Computer Engineering. I have worked at the University of California, Santa Barbara since 2008. I received my Master's Degree in Electrical Engineering from Arizona State University in 1996 and my Ph. D from the Massachusetts Institute of Technology in 2007. My current research involves CMOS VLSI, High-Speed circuit design, and low-power CMOS circuits for biomedical applications. Earlier in my career, I worked for Intel Corporation's Network Processor Division as a Senior Hardware Engineer and for Intel Corporation's Performance Microprocessor Division as a Senior Design Engineer. I have significant knowledge of CMOS imagers, circuit design, and networking.

2. As an educator, I have taught college-level courses in Analog VLSI, Mixed Signal VLSI, Digital VLSI, Circuit & Electronics, Communication Electronics, and Circuits, Devices, and Systems. I am also an inventor on four U.S. Patents (6,046,608, 6,308,257, 6,686,778, 6,976,998).

3. KP Innovations 2, LLC (“KP2” or “Patent Owner”) has hired me to investigate and opine on certain issues relating to U.S. Patent No. 10,499,168 to Klinefelter *et al.* (Exh. 1001, “the ’168 Patent”).

4. I understand that the ’168 Patent is assigned to KP2.

5. I am over 21 years of age. If I am called upon to do so, I am competent to testify as to the matters set forth in my declaration.

6. In this declaration, I discuss the technology relating to the ’168 Patent, including an overview of that technology as it was known in 2000-2001. This overview of the technology provides some of the bases for my opinions concerning the ’168 Patent and what knowledge a person of skill in the art (POSITA) at that time would have.

7. This declaration is based on the information currently available to me. To the extent that additional information becomes available, I reserve the right to continue my investigation and study.

8. In forming my opinions, I have reviewed and relied on information and evidence identified in this declaration, including, but not limited to, the ’168 Patent (Ex. 1001), U.S. Provisional Patent Application 60/243,162 (Exh. 1002), the prosecution history of the ’168 Patent (Exh. 1003), and prior art including:

9. U.S. Patent Application No. 5,808,663, “Multimedia Carousel for Video Conferencing and Multimedia Presentation Applications” (Exh. 1006) (“*Okaya*”);

10. U.S. Patent No. 6,782,281, “Folding Portable Telephone Apparatus” (Exh. 1007) (“*Nagasawa*”); and

11. U.S. Patent No. WO 01/31893, “Mobile Phone” (Exh. 1008) (“*Harma*”).

II. SUMMARY OF OPINIONS

12. Claims 18-21 (“Challenged Claims”) of the ’168 Patent generally describe a “communication service device operable with a communication network.” Exh. 1001, 22:32-33.

13. It is my opinion that each of the Challenged Claims can be distinguished from the references as asserted in grounds 1-4 of the Petition and hence are not anticipated under 35 U.S.C. § 102 or obvious under 35 U.S.C. § 103(a).

III. QUALIFICATIONS AND EXPERIENCE

A. Education and Work Experience

14. I have a Ph.D. in Electrical Engineering from Massachusetts Institute of Technology (MIT) (2007), a Master of Science from Arizona State University (1996), and a Bachelor of Science in Electrical Engineering from Manipal Institute

of Technology, Manipal, India (1994). Additional details regarding my education, work experience, and technical consulting experience are set forth in my CV, attached as Exhibit A.

15. I have extensive experience with CMOS imagers, circuit design, and networking.

16. From 2008 to the present, I have been employed at the University of California, Santa Barbara's Department of Electrical & Computer Engineering. I am also currently the Chair of the Department.

17. From 2001-2008, I worked for the Massachusetts Institute of Technology's EECS Department, including as a Post-Doctoral Associate in the Soft-Semiconductor Group with Professor Marc Baldo (2007-2008).

18. From 2000-2001, I worked for Intel Corporation as a Senior Hardware Engineer in their Network Processor Division; from 1996-2000, I worked for Intel Corporation's Performance Microprocessor Division as a senior design engineer.

19. Because of my background, training, and experience, I am qualified as an expert to explain the background of the technology encompassed by the '168 Patent as well as the meaning that the claim terms of the '168 Patent discussed herein would have had to a person of ordinary skill in the art in October 2000-2001 time

frame reading the claims in light of the specification and file history. Additionally, I have taught over 1000 undergraduate students in my 15 years as a professor.

B. Compensation

20. KP Innovations 2, LLC is compensating me for the services I am providing in connection with this *inter partes* review of the '168 Patent at a rate of \$250.00 per hour for work on this declaration and \$350.00 for attending depositions. The compensation is not contingent upon my performance, the outcome of the *inter partes* review or any other proceeding, or any issues involved in or related to the *inter partes* review.

C. Documents and Other Materials Relied Upon

21. The documents and materials on which I rely for the opinions expressed in this declaration are identified in this declaration (*See supra* Table of Exhibits (v-viii)). They include the '168 Patent and its prosecution history, the '162 Provisional Patent Application, the references cited in the Petition, and any other references identified explicitly in this declaration or the Petition (Paper 1), in their entirety, even if only portions of these documents are discussed here in an exemplary fashion.

IV. STATEMENT OF LEGAL PRINCIPLES

22. Patent Owner's counsel has advised me of the following legal principles:

A. Claim Terms

23. Patent Owner's counsel has advised me that the words of a claim are generally given their ordinary and customary meaning in view of the specification, as it would have been understood by a POSITA at the time of the invention.

B. Anticipation

24. Patent Owner's counsel has advised me that the invention must be novel for a patent claim to be valid. Counsel has further advised me that if every element of a claim is disclosed in a single prior art reference, then the claimed invention is anticipated and not novel, according to pre-AIA 35 U.S.C. § 102, effective before March 16, 2013.

C. Obviousness

25. Patent Owner's counsel has also advised me the invention must not be obvious to one of ordinary skill in the art under pre-AIA 35 U.S.C. § 103, effective before March 16, 2013, for the claims to be valid. I understand that where a prior art reference discloses less than all of the limitations of a given patent claim, that patent claim is invalid if the differences between the claimed subject matter and the prior art reference are such that the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. Obviousness can be based on a single prior art reference or a combination of references that disclose all limitations of the claimed invention.

26. I understand that obviousness is not driven by a rigid formula but is a flexible inquiry that reflects the fact that one of skill in the art exercising ordinary creativity may find a variety of reasons to combine the teachings of different references. I understand that a non-exclusive list of possible factors that may give one of skill in the art a reason to combine references includes any of the following: combining elements according to known methods to yield predictable results; simple substitution of known elements to obtain predictable results; use of known techniques to improve similar devices in the same way; applying known techniques to known devices 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 prompting variations of it for use in the same field; and teaching in the prior art that would have led one of ordinary skill to combine prior art reference teachings to arrive at the claimed invention.

D. Dependent Claims

27. Patent Owner's counsel has further advised me that dependent claims include all the elements from the claims on which they depend.

V. LEVEL OF ORDINARY SKILL IN THE ART

28. I understand from Patent Owner's counsel that the claims and specification of a patent must be read and construed through the eyes of one of skill

in the art at the time of the priority date of the claims. I have also been advised that to determine the appropriate level of skill; the following factors may be considered: (a) the types of problems encountered by those working in the field and prior art solutions to it; (b) the sophistication of the technology in question, and the rapidity with which innovations occur in the field; (c) the educational level of active workers in the field; and (d) the educational level of the inventor.

29. The preamble of the only independent claim at issue, claim 18, identifies the subject matter of the claims to be a “communication service device operable with a communication network.” Exh. 1001, 22:32-33. The claims also recite cameras and displays. *See* Exh. 1001, 22:47-53.

30. Therefore, in my opinion, a person of ordinary skill in the art would have some familiarity with underlying technologies involving communication or networking devices that utilize cameras and displays. For example, a person of ordinary skill in the art would need to know how to utilize electrical components of the system but would not necessarily need to be an expert on the design of communication service devices. A person of ordinary skill in the art would need to know how configurations for transmitting and receiving information over a network are created and implemented in devices.

31. Based on my education and experience, I am familiar with the level of knowledge that a person of ordinary skill would have possessed during the relevant time. In my opinion, one of skill in the art for the claimed technology would have a bachelor's degree in electrical engineering or a similar discipline and at least three years of relevant industry or research experience in networking between devices. This definition is approximate, and more education may substitute for industry experience or vice versa.

VI. BACKGROUND OF THE TECHNOLOGY OF THE '168 PATENT

A. Technology at the Time of the '168 Patent

32. I have been asked to provide some context to the technology related to the '168 Patent and the prior art. I understand that the relevant time frame is October 25, 2000, and before, I provide background on how the various technologies were developed and operated up to that time frame.

33. “The first cell phone with a built-in camera was manufactured by Samsung and released in South Korea in June of 2000. The SCH-V200 flipped open to reveal a 1.5-inch TFT-LCD, and the built-in digital camera was capable of taking 20 photos at 350,000-pixel resolution, which is 0.35-megapixels, but you had to hook it up to a computer to get your photos. The camera and the phone components were essentially separate devices housed in the same body.” Exh.2003, 1.

34. “There’s a strong argument that the first real camera phone was produced by Sharp and released in Japan by J-Phone (now SoftBank Mobile) in November of 2000. The J-SH04 could take photos ... at 110,000-pixel resolution or 0.11-megapixels. The real difference between it and the Samsung SCH-V200 was the fact that the J-SH04 allowed you to send your photos electronically.” Exh. 2003, 2. Picture of J-SH04 shown below:



Exh. 2003, 2.

35. Video conferencing systems were known at the time of the '162 Provisional Patent Application. The application stated:

In one attempt to provide a solution, a video conferencing service has been developed. The system, known as Video Interpreting Program, has been offered by a well-established Maryland company ... since 1997.

Exh. 1001, 1:29-31; 1002, 12:1-3.

36. What was not known, however, was an approach or device that is:

A cost effective system introduced to satisfy the need for remote visual exchange between an interpreter, a non-hearing impaired person and a hearing disabled person. Moreover, to date, there is no indication that any service providers has moved to implement a video/audio system based on Internet connections as implemented by some of the various embodiments of the present invention.

Exh. 1001, 2:5-12; 1002, 13:5-9.

37. The requirements for a video conferencing system at the time of the provisional patent typically included the need for “3 ISDN telephone lines to be able to receive an image on the teleconferencing equipment that provides the resolution and frame speed requisite to enable parties to the conference to be able to understand what an interpreter or translator is ‘saying.’” Exh. 1001, 3:5-9; 1002, 11:1-4. Further, special hardware was also required for computers and video conferencing systems to receive streaming images. *See* Exh. 1022. The location and inability to

move a video conferencing system are also problems identified by the provisional patent:

Further, most hospitals do not have a significant [amount of] telecommunications equipment for providing video conferencing at their facilities. However, for the hospitals that do have this equipment it is often located far away from the emergency room area and is considerably bulky and difficult, if not relatively impossible, to move from room to room. Thus, ***this solution of utilizing a hospital's teleconferencing equipment is also considered a failure to solve the above mentioned problems***, such as medical facility interpretation, as the videoconference presentation of the interpreter is not in a useful location relative to the emergency room for the patient or the family that may be able to advise medical personnel in the treatment of the patient.

Exh. 1001, 2:55-67; 1002, 14:13-21 (*emphasis added*). The use of traditional desktop-based video conferencing systems fails to address the identified problems. A POSITA would also understand the identified problems.

38. Besides video conferencing, mobile devices, such as personal digital assistance (PDAs), cellular (mobile) telephones with data capability, and laptop computers with wireless internet were also known at the time of the provisional patent application. However, smartphones, such as the Apple iPhone, were not

released until June 29, 2007,¹ more than six years after the filing date of the '162 Provisional Patent Application.

39. The solution provided by one of the embodiments of the '162 Provisional Patent and '168 Patent was to use portable devices connected to the Internet and wide area networks (WAN):

In one preferred embodiment, the present invention provides for the introduction of an online exchange linking a network of qualified sign language interpreters, oral interpreters, simultaneous transcribers and, where appropriate, voice or motion recognition captioning. The exchange would utilize current Internet and wide area computer network technologies allowing live audio and video feeds.

Exh. 1001, 9:4-10; 1002, 26:1-5.

¹ Apple CEO Steve Jobs announced the first iPhone on January 9, 2007, at the Macworld convention in San Francisco. The iPhone was released to the public on June 29, 2007.

40. To address the portability of the conferencing system, the provisional called out examples of Internet-capable portable devices: “PDA, laptop, Internet-capable cellular phone, or similar handheld device [*that could incorporate the teachings of this patent to create a device*] *capable of receiving, displaying, and broadcasting* the remote sign language or foreign language interpreter’s signing and vocal communications.” See Exh. 1001, 9:32-36; 1002, 22:18-20 (*emphasis added*).

B. Challenged Claims

41. Petitioner challenged claims 18-21 of the ’168 Patent. See Pet. 6. Claim 18 is an independent claim with dependent claims 19-21. Exh. 1001, 22:31-62.

C. Priority Date

42. The ’168 Patent was filed as a Divisional application of application 10/057,131. The ’131 application (now Patent No. 7,792,676) was filed on October 25, 2001, and claims priority to Provisional application number 60/243,162, filed on October 25, 2000. Counsel has informed me that in order for a provisional to be relied on for priority, it must include a description of the invention. This description should be sufficient to allow someone skilled in the relevant field to understand how to make and use the invention. This description serves as the foundation for claims in the utility application.

43. The Patent Examiner did not raise any issues with the priority claim during the prosecution of the application, nor did the PTAB during an *ex parte* appeal (Exh. 1003, 832-837). *See* Exh. 1003. My opinions will be based upon the priority date of the '168 Patent, as no opinions would be required for the predated references of Grounds 3 and 4 (*Harma & Nagasawa*), and my Grounds 1 and 2 opinions are not affected by using the priority date of the '168 Patent.

VII. CLAIM CONSTRUCTION

44. I understand from Patent Owner's counsel that patent claims generally are given their plain and ordinary meaning to one of skill in the art as of the priority date of the analyzed claim. I also understand from Patent Owner's counsel that the intrinsic record of the Patent itself may help define that ordinary meaning. However, the intrinsic record may also reflect the patentee's clear desire to be his own lexicographer and depart from the ordinary meaning of a claim term.

45. To the extent that a claim term of the '168 Patent is used in the same way as the same term in the relevant standards, technical specifications, and/or prior art, it is my position that such claim term should be given its plain and ordinary meaning to one of skill in the art.

A. Construction of “receive and transmit information”

46. Claim 18 recites “at least one user communication device configured to receive and transmit information over the communication network.” Exh. 1001, 22:34-36. The term “receive and transmit information” means real-time or near real-time audio and visual information. Further, the Preamble to 18[p] states, “[a] communication service device operable with a communication network,” Exh. 1001, 22:31-32. The preamble enables the communication device of claim 18 to transmit and receive real-time or near real-time audio/visual information through the communication network. The use of a “communication service device” in claim 18 also provides a POSITA context for the service device to be used for communication, which for interpreting or translating would have to be real-time or near real-time communication.

47. The specification states, “interpreting services may be displayed in real time or near real time.” Exh. 1001, 5:60-61. The patent is directed at interpreting services. In order to be effective, an interpreter must be able to see what a deaf person is signing in real-time. There is no example of non-real-time recorded video information being sent and then translated, and all examples in the ’168 Patent are real-time information. Further, “the synthespian substitution or masking of identities may by [sic] performed in real time by sufficiently fast processing of digital data

corresponding to the images and voices of the aforementioned parties.” Exh. 1001, 17:1-4. The Petition even admits that the “’168 Patent relates to systems for providing ‘real-time or near real-time interpreting services for utilization on a network.” Pet. 8 (*citing* EX1001, 1:16-18).

B. Petition uses improper claim interpretation

48. Dr. Chatterjee does not base his construction on the plain meaning, the specification, or the prosecution history. Instead, he improperly utilizes PO’s contentions in their complaint in the co-pending lawsuit. PO’s counsel informed me that no construction of claims occurred in the associated litigation.

49. I have also been told when interpreting claims terms, intrinsic evidence should be used, rather than extrinsic evidence such as Exh. 1009 (infringement contentions from a complaint filed in Federal Court). I applied a plain and ordinary meaning to analyze these claim terms. I also reserve the right to offer additional opinions on claim construction in response to arguments that may be made by the Petitioner or interpretations made by the Board.

VIII. IDENTIFICATION OF THE PRIOR ART AND SUMMARY OF OPINIONS

50. As explained below, it is my opinion that the following references, and combinations of the references provided by Petitioner, fail to disclose all the elements of the Challenged Claims of the ’168 Patent. Thus, the Petition fails to

render any Challenged Claims unpatentable. The references relied on in the Grounds of the Petition are:

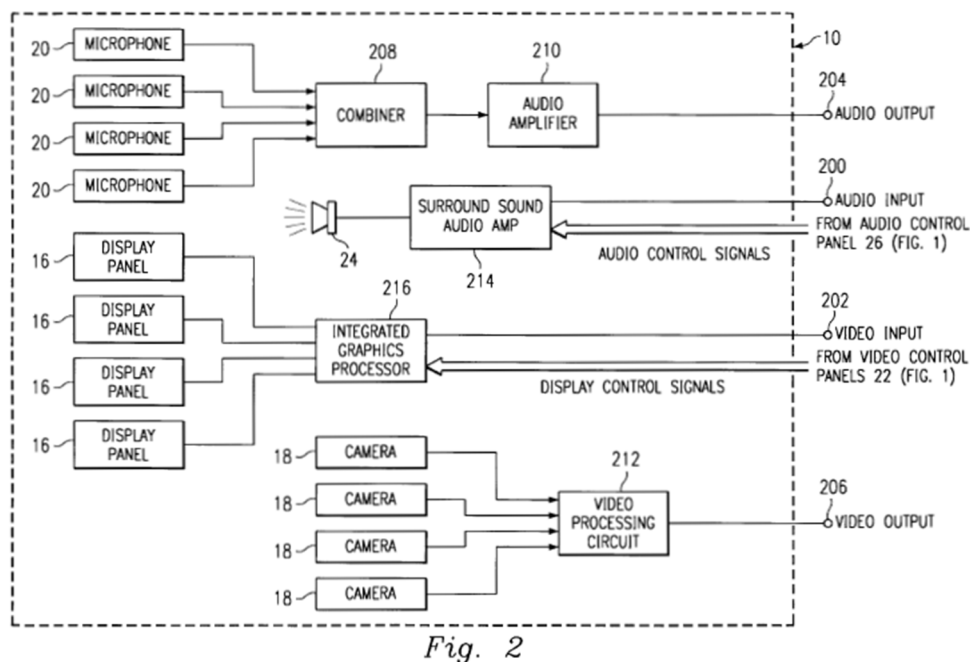
- Exh. 1006 *Okaya*
- Exh. 1008 *Harma*
- Exh. 1007 *Nagasawa*

A. Okaya

51. U.S. Patent No. 5,808,663 (“*Okaya*”) (Exh. 1006) was filed on January 21, 1997, and issued on September 15, 1998.

52. *Okaya* describes a multimedia peripheral device for connection to a computer or video conferencing system, similar to a monitor, microphone, or camera. It is not a standalone device that can connect to a network.

53. *Okaya*’s multimedia carousel device is for use in a video conferencing system or with a computer. It includes a cube-shaped media unit rotatably disposed on a stationary base with four outwardly facing sides of the media unit, each having an active color matrix display, cameras, and voice-activated microphones. *See* Exh. 1006, Abstract. The *Okaya* carousel “includes several input and output terminals for integrating with a multimedia computer or video conferencing system.” Exh. 1006, 3:2-3. *Okaya* does not include any networking capability. *See* Fig. 2, of *Okaya*:



Exh. 1006, Fig. 2.

54. The multimedia carousel of *Okaya* has multiple displays that are used to present various types of media (e.g., slides, video, feeds, and images). The displays do not function as an integrated dual-screen device but are used independently to enhance presentations while being controlled by a computer or video conferencing system.

55. The multimedia carousel of *Okaya* has multiple cameras that can be voice-activated to capture different perspectives. The cameras, if voice-activated, allow the carousel to capture different perspectives and focus on a speaker or other sound automatically, and the computer video conferencing system displays the

images across the network. In non-voice-activated implementations, the control of the cameras would be from a computer or video conferencing system.

B. Harma

56. PCT International Publication No. WO 01/31893 (*Harma*) (Exh. 1008) was filed on October 25, 2000, and has an international publication date of May 3, 2001.

57. The *Harma* reference describes a mobile phone with multimedia capabilities, including two cameras and a single display with support for video conferencing and media playback of video clips and still photographs. The two cameras are facing in opposite directions (one forward-facing and one rear-facing). The two cameras do not function simultaneously for interactive real-time video communication.

58. *Harma* describes a mobile phone with a first camera and a second camera with a capturing direction of the second camera essentially different from the capturing direction of the first camera. *See* Exh. 1008, 1:26-28.

59. *Harma* explains that “[m]ore and more often mobile phones include a camera that enables capturing still pictures and video clips, as well as their use in video conferences.” Exh. 1006, 1,4-5.

60. *Harma* teaches that:

... when capturing still pictures or capturing video clips, the capturing direction of the camera points away from the user, whereas in a video conference, the capturing direction of the camera is towards the user. Moreover, a usage of this type sets many requirements for the camera provided in the mobile phone, for instance, it must be light in weight, small in size, economical in expenses, and it must have good picture quality.

Exh. 1006, 1:6-12. Furthermore, “the object of the [Harma] invention is a mobile phone that enables capturing still pictures and video clips, for instance, in a video conference.” *Harma* only describes video clips in video conferencing, not real-time (i.e., streaming) video; essentially, a live video is a continuous stream, whereas a video clip is a specific, extracted section of a previously made video.

61. A POSITA would have understood that a "live video" is a broadcast happening in real-time or near real-time, where viewers see the content as it's being recorded, while a "video clip" is a short segment taken from a longer video, which has already been recorded and may have been edited beforehand.

62. The cameras of *Harma* have different capabilities. The first camera facing the user takes still photographs with a short focal length. The image (still photograph) is then processed for possible pattern recognition; that image (still photograph) can then be combined with another image (still photograph) captured by the second camera with a longer focal point. *See* Exh. 1006, 6:20-23. *Harma*

explains that the images are captured, and afterward, “the mobile phone can be moved and inclined, and the user’s image can still be shown in the split-screen image 10. Exh. 1008, 6:22-23. The image is a still photograph that has already been processed and combined, allowing the camera to be moved without affecting the already captured still photograph. Further, the “first camera has a first angle of view, which is essentially smaller than the second angle of view of the second camera. Thus, the first camera can be used for capturing the target, generally the user, close by, for example, the distance of 20 cm, whereas the second camera produces a sharp image from a further distance.” Exh. 1006, 3:31-35. The further distance is “typically from about 50 – 300 cm.” Exh. 1006, 5:2-3.

63. Nothing in *Harma* teaches capturing and transmitting, in real-time or near real-time, video images. Rather, video clips are captured and sent in a video conference. Video clips are portions of stored video, not real-time or near real-time video being transmitted. This also closely corresponds to what a POSITA would know around the time of *Harma*’s international filing date (October 25, 2000). *See* Exh. 2006, 1 (J-Phone released in November of 2000, transmitting only low-resolution still images).

64. As explained previously, the priority date of *Harma* does not predate Patent Owner’s ’162 Provisional Patent Application.

C. Nagasawa

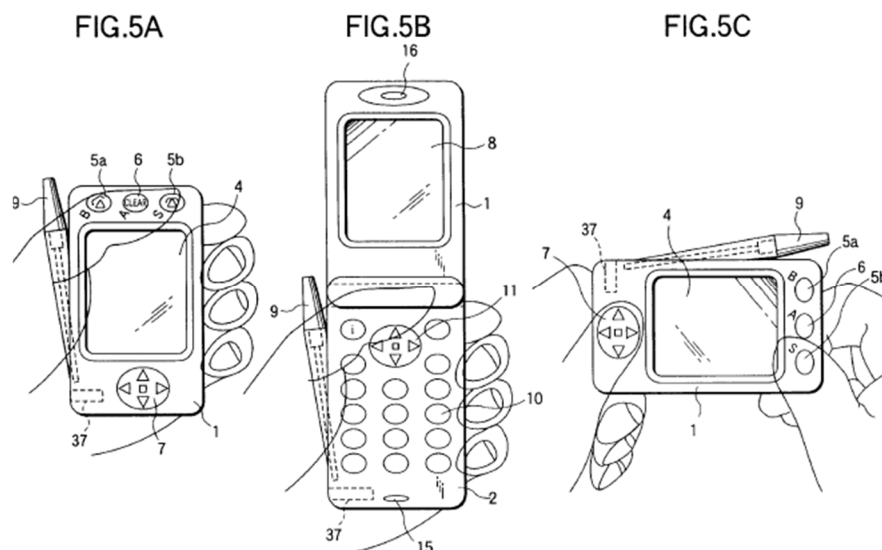
65. U.S. Patent No. 6,782,281 (“*Nagasawa*”) (Exh. 1007) was filed on November 3, 2000, and issued on August 24, 2004.

66. The *Nagasawa* patent describes a folding portable telephone device with two displays (an inner and an outer display) and a single camera located on the hinge between two housings that make up the folding portable telephone. Its primary focus is on enabling gaming while the portable telephone device is closed rather than enhancing communication capabilities. The inner display is used when the device is unfolded for telephone operation. The outer display is a smaller display that provides basic call information (i.e., notifications, caller ID, and simple interactions). The inner and outer displays are not designed to work together and do not support simultaneous real-time communication.

67. *Nagasawa* discloses an approach for a folding portable telephone apparatus with a first display and a second display on a first case body. *See* Exh. 1007, Abstract.

68. *Nagasawa* mentions a camera only once. The camera is “a small-sized TV camera 53 [located] at the hinge” (Exh. 1007, 7:40; Fig. 12B) and not on the first case body. The hinge is the thickest part of *Nagasawa*’s device, and the thinnest part is the first case body. *See* Figs. 12A-B, 13A-C. The purpose of the first screen is

for the device to be used as a pocket game machine. *See* Exh. 1007, 4:54-60. Controls for limited call functionality and gaming are accessible when the device is closed, as shown in Figs. 5A-C:



The first screen is not used when the device is open. Exh. 1007, 5:15-30.

69. Patent Owner's '162 Provisional Patent Application filing date of October 25, 2000, predates the filing date of the *Nagasawa* patent of November 3, 2000.

IX. THE '168 PATENT'S CHALLENGED CLAIMS

70. In my Declaration, I analyze the following bases for invalidity:

Grounds	Basis	Challenged Claims
1.	35 U.S.C. § 102 <i>Okaya</i> .	18-21
2.	35 U.S.C. § 103 <i>Okaya</i> .	18-21
3.	35 U.S.C. § 103 <i>Harma</i> .	18-20
4.	35 U.S.C. § 103 <i>Nagasawa and Harma</i> .	18-21

A. GROUND 1: Anticipation Based on *Okaya*

71. In my opinion, claims 18-21 are not anticipated by *Okaya* (Exh. 1006) because *Okaya* does not teach every element of claims 18-21.

1. Independent claim 18

72. The specification of the '168 Patent explains that the communication service device of claim 18 overcomes the problems discussed in the background with known video conferencing systems. *See* Exh. 1001, 2:48-67. “FIG. 3 depicts a preferred embodiment of a hand held two user computer device.” Exh. 1001, 4:61-63. The communication device of claim 18 is the device that must receive and present the video and audio data in a form for transmission over a network and receive the data in a form from the network. It is an integrated device that is able to communicate with a network.

73. *Okaya* discloses a peripheral device that must be connected to a computer or video conferencing system. It does not disclose a network enabled device, nor does it disclose a single integrated device.

a. 18[p] A communication service device operable with a communication network, comprising

74. This claim element requires the communication service device be operable with a communication network. The device in *Okaya* is a multimedia carousel. The carousel has no connection to a network. *See* Exh. 1006, Fig. 2. The data input and output from the carousel is not in a format for communicating over a communication network. Claim 18 is for a communication service device, not a system, such as a multimedia carousel device connected to a computer device.

b. 18[a] at least one user communication device configured to receive and transmit information over the communication network

75. This claim element requires the device to be configured to receive and transmit information over the communication network. *See* Exh. 1001, 22:34-36. I understand that when “configured to” language is used it is not enough that a device may be capable of performing the claimed function; it must be specifically designed or adapted to perform that function.

76. Figure 2 of *Okaya* identifies the input and output as audio output being separate from video output and video input being separate from audio input. The

inputs and outputs are not configured for transmission over a network. *See* Exh. 1006, Fig. 2. There is no network communication that is part of the display device of *Okaya*. It is impossible for the carousel alone to communicate over a network because it has no network capability. It would have to be connected to another device or entirely re-designed; hence it is not configured to receive and transmit information over a communication network.

77. The Petition seems to erroneously assert a video conferencing system that is not shown in *Okaya*. *See* Exh. 1006, 3:19-21. Further, Petitioner reads into the *Okaya* reference a network-enabled device with the statement:

Okaya's carousel, either alone or integrated with a multimedia computer and/or video conferencing system, permits up to four users to simultaneously communicate with a remote vendor over a network.

Pet. 16. The carousel of *Okaya* is connected to a multimedia computer or video conferencing system, not “integrated with” or combined together.

78. The Petition on page 16 asserts that “*Okaya's* carousel ***can be*** integrated with a multimedia computer and/or video conferencing system. This is insufficient. It does not disclose that the carousel itself is specifically made or adapted to receive or transmit information over the communication network. Nowhere in *Okaya* is such “integration” described or taught in the figures or specifications. *Okaya* does not disclose the integration of devices, as the carousel is

depicted in all the figures as a separate peripheral device connecting to a computer device (or videoconferencing device) that enables encoding/decoding audio and video data for transmission over a network.

79. The Petition also states that a POSITA would have known to configure the I/O ports of Figure 2 to function with commercially available PCs. Pet. 18. Such connection results in a video conferencing system. This configuration is for audio and video signals. No configuration for network communication is shown or described anywhere in Figure 2 of *Okaya*. No explanation of how the video and audio input and output data are encoded and decoded for transport over a network is provided in the Petition.

80. It is my opinion that *Okaya's* device is a computer peripheral device that connects, like a monitor, to a computer/videoconferencing system and not a standalone device with network capability, as required in claim 18. Further, the Petition is using a video conferencing system and not a single device encompasses all the elements of claim 18.

- c. **18[e] wherein the first and second input devices and first display devices are carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing**

81. The controls of the *Okaya* carousel do not enable a user to switch between cameras, display split screens, or otherwise process different inputs. Voice-activated switching can occur in *Okaya*; the captured images show up from the switched camera in the other video conferencing system and not on a display of the carousel connected to your computer/video conferencing system. No, access by the first user of the first display device occurs as required. It is the other computer or videoconferencing system across the network that is accessing the display. The purpose of the carousel device is to provide an image across the network to show what is occurring in the conference room with the carousel. The cameras are accessed from across the network, and the carousel display is accessed locally. It is across the network where your image shows up from the carousel's camera. *See* 1006, 3:38-42. It is the computer or video conferencing system doing that type of processing. This makes sense because of the additional hardware and power requirements to display real-time video. *See* Exh. 1021-22.

82. The only statement in *Okaya* regarding split screen (simultaneous access) is:

[I]mages captured [not video] by all of the cameras 18 could be simultaneously displayed in a “split screen” type of arrangement on the vendor’s display panel. Still further, even assuming voice-activated cameras are used, a sort of split screen format could still be used, with the current speaker’s image taking up a larger area of the vendor's display screen than the images captured by the other cameras.

Exh. 1006, 4:9-15. The split screen discussed is not occurring on *Okaya*’s carousel, it is occurring on the vendor’s display screen. Further, the explanation is of captured images, and not captured video, real-time video, or any other indication that the captured images are at the same time for the “split screen” of *Okaya*. This is especially true of bandwidth limitations that existed at the time of *Okaya*.

83. Claim 18 claims a *device*, and the “access ... from” of claim element 18[e] occurs on that device. The access by at least one user of the first and second input device “at the same time” does not occur on a different device (i.e., computer/videoconferencing system rather than the carousel).

84. The *Okaya* carousel device describes a “display control panel 22 having several control buttons for controlling various aspects of the associated display panel 16.” Exh. 1006, 4:58-60. None of the video controls for the *Okaya* carousel device

are described as accessing other displays of the carousel. The controls are specifically for the associated display panel, not other display panels or input devices of the carousel.

85. The *Okaya* carousel device has an “audio control panel 26 including several buttons or knobs for controlling various qualities of the speaker audio output.” Exh. 1006, 4:62-64. None of these controls are for accessing input devices.

86. Figure 2 of *Okaya* does not show any other control signals but displays control panel 22 and video control panel 26.

87. The Petition states that “at least one user would utilize the video conference system to call up a remote participant.” Pet. 25. First, the Petitioner describes the device as the carousel device, then the device is described as the carousel device and a computer/video conference system. Then, the device is described as the carousel device, a first computer/video conference system, network, and second computer/video conference system where a user selects what is displayed on the remote (first computer/video conference system). The Petition started with a carousel and now is using two teleconferencing systems and the carousel as the device.

88. This claim element 18[e] also requires “an orientation to allow the at least one user to access the at least one input device *from the first side of the housing*

at the same time as the at least one second input device from the second side of the housing.” Exh. 1001, 22:47-52. The “access” has to be from the first side and not across a network on a second video conferencing system.

89. If the “at least one user” of the claim element is two or more users, the claim still requires the user “access” to be from the first side of the housing (i.e., access is not from all sides) and not simply accessing the cameras and displays on the multimedia carousel at the same time as asserted by the Petitioner. *See* Pet. 25.

90. The “access” of claim element 18[e] is clicking on the icon to start the interpreting session. Exh. 1001, 9:45-49. The icon is displayed on the first display device on the first side along with the first input device. Once started, the interpreting service uses the first input and second input devices along with the first display.

91. The ’162 Provisional Patent Application and the ’168 Patent also mention webpages that a POSITA would understand are selected or provided (“accessed”) with additional information used by the interpreting session. *See* Exh. 1002, 12:14 (the provider computer provides a series of web pages that allow access to the interpreting system); 15:11-12 (present invention may be implemented on any computer that has access to a network, *e.g.*, the World Wide Web); 15:21-22 (In one preferred embodiment, the provider computer provides one or a series of web pages

that allows access to the interpreting system); 17:11-13 (In still other preferred embodiments, the user is provided with a pull-down menu that allows for users to choose from a variety of predefined menu options, wherein the options define the type of service request desired); and 23:3 (menu would provide a choice of icons) ; Exh. 1001, Abstract; 3:60-67.

92. “Access” is via the first side of the housing and not simply standing in front of a camera.

93. The Petitioner’s “First Theory” requiring two users appears to use a preferred embodiment for claim scope, “[t]he claim scope is presumed in this interpretation to include this preferred embodiment.” Pet. 26. The Petitioner admits that the claims were amended during prosecution, *id.*, and appears to be attempting to limit the claim to its previous form.

94. *Okaya* does not disclose the “access” limitation of this claim element. I understand that the Petitioner also asserts that “(one member of *Okaya*’s product team ‘accesses’ all cameras 18 of the multimedia carousel 10 at the same time as viewing this local display 16 by operating the carousel...a) turn on/off the various cameras, (b) adjust the media unit to change the video being captured by the cameras, and/or (c) operate the video conferencing system and/or multimedia PC to call up

the remote participant, causing the transmission of all the camera feeds to the remote participant.” Pet. 30-31.

95. However, none of the controls described on *Okaya*’s carousel provide such control. If such control exists, it is not found on the *Okaya* carousel device but in the local videoconferencing system or remote video conferencing system connected to the carousel. The claim element requires “have an orientation to allow the at least one user to access the at least one input device *from the first side of the housing* at the same time as the at least one second input device from the second side of the housing.” Exh. 1001, 22:47-52 (*emphasis added*).

96. Further, this does not equate to physically turning the carousel of *Okaya* to obtain access. If the carousel is turned, then the first side is no longer the first side. Further, it would make the claim limitation meaningless as the first and second input devices and first display device are carried by the housing in claim elements 18[b-e]. Hence, movement of the housing has to move everything the housing is carrying. The side causing the movement is irrelevant. Finally, the claim recites “access” and not movement. There is no patent or prosecution history to support such an interpretation.

2. Claim 19 – “The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions.”

97. Claim 19 is a dependent claim that incorporates all the elements of independent claim 18. As *Okaya* fails to teach or describe all of the elements of independent claim 18, *Okaya* also fails to teach or describe all the elements of dependent claim 19.

3. Claim 20 – “The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera.”

98. Claim 20 is a dependent claim that incorporates all the elements of independent claim 18. As *Okaya* fails to teach or describe all of the elements of independent claim 18, *Okaya* also fails to teach or describe all the elements of dependent claim 20.

4. Claim 21 – “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”

99. Claim 21 is a dependent claim that incorporates all the elements of dependent claim 19 and independent claim 18. *Okaya* fails to teach or describe all of the elements of independent claims 18 and 19, as well as all the elements of dependent claim 21.

100. It is my opinion that the *Okaya* patent at least fails to describe all of the elements of claims 18-21 as (1) the *Okaya* carousel device fails to have network capability, nor is it configured to receive and transmit information over the communication network, and (2) have an orientation to allow the at least one user to access the at least one input device from the first side of the housing at the same time as the at least one second input device from the second side of the housing.

B. GROUND 2: Obviousness Based on *Okaya*

101. The combination of *Okaya*'s carousel in view of what a POSITA knows also fails to disclose every element of claims 18-21.

1. No motivation to combine *Okaya*'s carousel device with *Okaya*'s computer device

102. *Okaya*'s separate devices, such as a computer or video conferencing system, must be connected to the carousel device for it to operate. The devices are not combined into a single housing, but rather connected via video and audio connections, similar to connecting a computer to a monitor.

103. It is my opinion that a POSITA would not make such a combination because there would be no saving in size, as the displays still have to be part of a video conferencing system and sit on a table viewable by the videoconference participants.

104. Further, it would be undesirable to combine *Okaya's* carousel with *Okaya's* computer into one device. Video and audio processing required a powerful computer in 2000, resulting in fans exhausting the generated heat at the table around which people are sitting. A POSITA would understand that noise from fans of computers from that period would disrupt a conference or meeting. Further, more table space would be required for the combined carousel and computer, and additional space would also be needed for the keyboard and mouse. This is why videoconference systems would have display devices, such as the carousel, separate from the computer/videoconferencing system at the time of the Provisional Patent Application filing. The explicit purpose of the carousel is for ease of multimedia presentations in a conference room as a display. Thus, from the outset there is no motivation to combine the computer and the carousel.

105. *Okaya* states a “technical advantage achieved is that the multimedia carousel is much less expensive than other means for enabling the same function, such as LCD projectors.” Exh. 1006, 2:24-26. Making a unique device housing the computer and carousel would make the resulting device more expensive than separate devices, negating a motivation to combine the carousel and computer into a single device.

2. Independent Claim 18

106. It is my opinion that the combination of *Okaya's* carousel with the computer/videoconferencing system does not render claim 18 obvious as I understand it, because all the claim elements are not found in the combination.

a. 18[b] the at least one user communication device comprising a housing having a first side and a second side

107. The device has to be operable with a communication network. The device in *Okaya* is a multimedia carousel. The carousel has no connection to a network. *See* Exh. 1006, Fig. 2. The data input and output from the carousel is not in a format for communicating over a communication network. Claim 18 is for a communication service device, not a system, such as a multimedia carousel connected to a computer.

108. Simply connecting the carousel via its audio and video input and output ports, as asserted in the Petition, fails to have one or more communication devices *having a housing, i.e., a single housing*, with a first side and a second side as required by claim element 18[b]. The carousel has a housing and the computer/videoconferencing system would have one or more housings.

- b. 18[c] at least one first input device and first display device configured to allow the at least one user to input and output visual information wherein the at least one first input device and first display device resides on the first side of the housing**

109. As explained for element 18[b], there is not a single housing as required by the claims. *See supra* ¶¶107-108.

- c. 18[d] at least one second input device configured to input visual information wherein the at least one second input device resides on the second side of the housing;**

110. As explained for elements 18[b] and 18[c], there is not a single housing as required by the claims. *See supra* ¶¶107-109.

- d. 18[e] wherein the first and second input devices and first display devices are carried by the housing in an orientation to allow the at least one user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing**

111. As explained for elements 18[b], 18[c], and 18[d] there is not a single housing as required by the claims. *See supra* ¶¶107-110.

112. Further, the claim element “allow[s] the at least one user to access the at least one first input device and first display device from the first side of the housing is not taught or described by the combined devices in *Okaya*.

113. The “access” of claim element 18[e] is clicking on the icon to start the interpreting session. Exh. 1001, 9:45-49. The icon is displayed on the first display device on the first side along with the first input device. Once started, the interpreting service uses the first input and second input devices along with the first display.

114. The '162 Provisional Patent Application and the '168 Patent also mention webpages that a POSITA would understand are selected or provided (“accessed”) with additional information used by the interpreting session. *See* Exh. 1002, 12:14 (the provider computer provides a series of web pages that allow access to the interpreting system); 15:11-12 (present invention may be implemented on any computer that has access to a network, *e.g.*, the World Wide Web); 15:21-22 (In one preferred embodiment, the provider computer provides one or a series of web pages that allows access to the interpreting system); 17:11-13 (In still other preferred embodiments, the user is provided with a pull-down menu that allows for users to choose from a variety of predefined menu options, wherein the options define the type of service request desired); and 23:3 (menu would provide a choice of icons) ; Exh. 1001; Abstract; 3:60-67.

115. It is my opinion that all of the elements of claim 18 are not disclosed in the combined devices disclosed in the *Okaya* reference.

3. Claim 19 – “The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions.”

116. Claim 19 is a dependent claim and incorporates all the elements of independent claim 18.

117. As with independent claim 18, claim 19 requires a single housing, not devices connected by cables as asserted by Petitioner in the Petition. *See supra* ¶107.

118. It is my opinion that all of the elements of claim 19 are not disclosed in the combined devices of the *Okaya* reference.

119. All the elements of independent claim 18 are not disclosed in the combined devices of the *Okaya* reference. *See supra* ¶¶107-115.

4. Claim 20 – “The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera.”

120. Claim 20 is a dependent claim and incorporates all the elements of independent claim 18.

121. All the elements of independent claim 18 are not disclosed in the combined devices of the *Okaya* reference. *See supra* ¶¶101-111. It is my opinion that all of the elements of claim 20 are not disclosed in the combined devices disclosed in the *Okaya* reference.

5. Claim 21 – “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing.”

122. Claim 21 is a dependent claim and incorporates all the elements of independent claims 18 and 19.

123. All the elements of independent claim 18 and dependent 19 are not disclosed in the combined devices of the *Okaya* reference. *See supra* ¶¶101-112.

124. It is my opinion that all of the elements of claim 21 are not disclosed in the combined devices disclosed in the *Okaya* reference.

125. Claims 18-20 are not obvious in the combined devices of the *Okaya* reference because there is no motivation to combine such devices, and if combined as described by Petitioner, there is not a single housing as required by the claims of the '168 Patent.

C. GROUND 3: Obviousness Based on *Harma*

1. Independent Claim 18

126. It is my opinion that the *Harma* reference does not render claim 18 obvious because all the claim elements are not found in the single reference in view of the knowledge of a POSITA. As previously explained, *Harma* does not send real-time information, *Harma* teaches only still photographs and VIDEO CLIPS being sent. *See supra* ¶¶56-60.

127. The '168 Patent allows for near real-time video, so a POSITA would know some buffering would be allowed. However, the video transmitted and displayed to remote users would be without perceived delay between the events as they occur and the events depicted in the video.

128. *Harma* only discloses video clips and pictures, not real-time data, nor displays events as they occur at or nearly at the time the events happen. A POSITA would know a picture is an event frozen in time. A POSITA would also know that a video clip is a portion of a stored video. It is a clip or a segment from a larger video. It is not in real-time or near real-time.

129. The reason for *Harma* specifically limiting its transmission to pictures and video clips (even for video conferencing) is consistent with what was known by a POSITA at the time. Data transmission over a cellular network was limited. Cellular telephones were just beginning to transmit pictures. *See supra* ¶34.

130. A POSITA would also know and understand that limiting transmission to video clips and still photographs would be desirable because less transmission bandwidth would be required.

- a. **18[a] at least one user communication device configured to receive and transmit information over the communication network.**

131. As explained above, the information received and transmitted in *Harma* is limited to still photographs and video clips, even during video conferencing. *See supra* ¶¶59-62. The '168 Patent requires real-time or near real-time information to be received and transmitted over the network. Video clips of a person signing or a person talking would miss important information that would prevent a translation from occurring, as disclosed in the '168 Patent. A POSITA knows of only low-resolution still photographs being able to be sent from a cellular phone, as described in *Harma*.

132. It is my opinion that *Harma*, along with the knowledge of a POSITA, does not teach or describe this element of claim 18.

- b. **18[d] at least one second input device configured to input visual information wherein the at least one second input device resides on the second side of the housing;**

133. The second input device in *Harma* is limited to video clips and still photographs. It does not generate visual information that is real-time or near real-time. *See supra* ¶¶46-47.

134. It is my opinion that *Harma*, along with the knowledge of a POSITA does not teach or describe this element of claim 18.

2. Claim 19 – “The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions.”

135. Claim 19 is a dependent claim and incorporates all the elements of independent claim 18.

136. All the elements of independent claim 18 are not disclosed in the *Harma* reference. *See supra* ¶¶122-130.

137. It is my opinion that *Harma*, along with the knowledge of a POSITA does not teach or describe this element of claim 19.

3. Claim 20 – “The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera.”

138. Claim 20 is a dependent claim and incorporates all the elements of independent claim 18.

139. All the elements of independent claim 18 are not disclosed in the *Harma* reference. *See supra* ¶¶119-127.

140. It is my opinion that *Harma*, along with the knowledge of a POSITA does not teach or describe this element of claim 20.

D. GROUND 4: Obviousness Based on *Nagasawa and Harma*

1. No Motivation to Combine

141. There is no motivation to combine *Nagasawa and Harma*.

142. The *Nagasawa* patent covers a foldable phone that has a screen on the outside that enables the phone to act as “a pocket game machine” with buttons for user control beside the screen. *See* Exh. 1007, Abstract.

143. The *Nagasawa* patent only discloses one camera 53 and a third display 51 for use in video conferencing:

Video conference display may be provided where the photo sticker 51 is to be affixed in order to provide a folding portable apparatus equipped with a small-sized TV camera 53 at the hinge.

Exh. 1007, 7:37-40; Fig. 12B. *Nagasawa* describes a phone with three screens: 4, 51, and 52, along with camera 53. The use of *Nagasawa* for video conferencing is shown to be used when the phone is in an open position in Fig. 12B. The term “camera,” element 53, only appears once in the *Nagasawa* patent. And it is not on the housing; it is on a hinge.

144. There is no suggestion in the *Nagasawa* patent for 1) having a second camera, and 2) if a second camera is desired, that it would be placed on the second side opposite from the first camera.

145. Figure 3B of the *Nagasawa* patent depicts the controls used with the “pocket game.” A person using the pocket game would cover any camera placed on the outer surface of the first case body. Any camera placed in such a position would be abused with dirt and oil from a game player's hand.

146. The Petition asserts that “the POSITA would have been motivated to implement the two cameras facing different directions, taught by *Harma*, in the base system of *Nagasawa* to obtain the enhanced two-camera features described by *Harma*.” However, the petition provides no information on what those features are and why they would motivate the combination.

147. A statement is made that “the benefits of filming both the user and the surroundings would have allowed the display of a split-screen image containing the captures from both cameras.” Pet. 56. However, what is described is what a second camera would capture, not how having that additional information is a benefit.

148. The ability to display split-screen images is not dependent upon having a second camera in the *Nagasawa* phone. As images are received from camera 53 of *Nagasawa*, and an image is received from the person whose image is appearing on display 51. So, the ability to have a split screen is not dependent upon an additional camera.

149. As camera 53 in *Nagasawa* is on the hinge, it would not be desirable to have a camera placed on the housing that is not fixed in the same plane as a camera placed in the upper outer housing. Petitioner asserts that a POSITA would be aware of dual cameras in a flip phone, citing Exh. 1019. The cameras in Exh. 1019 are depicted in Figures 1 and 2 to be on opposite sides of the same plane. A POSITA

would not be aware of mounting one camera on the hinge of a flip phone and then mounting a second camera in a position in a separate plane.

150. Further, placing a camera in the middle of the one on the side facing the user and placing a camera on the opposite side at the top of the phone would be undesirable as a slight movement of the center camera results in a greater movement of the other camera.

151. The use of the “pocket game” would adversely affect the clarity of the additional camera’s images, and the offset location of one camera from the other would adversely affect the usefulness of the second camera. These drawbacks would limit the successful addition of the second camera.

152. Petitioner ignores that camera 53 is placed on the hinge in *Nagasawa* and Figs. 1a-1b (*annotated*), *see* Pet. 59, and the petitioner proposes removing that camera, then proposes placing camera 4 above the hinge and camera 7 on the upper right position of the open flip phone. So, Petitioner is acknowledging that the motivation to combine would require the POSITA to remove camera 53 and replace that one camera with two more. This is not combining but re-engineering *Nagasawa*. Moreover, The Petitioner’s configuration results in a suboptimal configuration due to the problem of having a camera in the middle of one side of the phone and the other camera at the top of the other side of the phone. *See supra* ¶150.

153. The phone device of *Nagasawa* is intentionally designed so the only elements found on the outside of the closed phone are elements used for gameplay. *See* Exh. 1007, Figs. 1B, 3B, 5B, and 11B. It would be obvious to a POSITA that the purpose of the *Nagasawa* phone is to provide gameplay when in a closed position. Exh. 1007, Fig. 5B.

154. In Figure 3A, case body 1 is shown to be smaller than case body 2. The display 4 requires the majority of area on the outer surface of the case body 1. The remaining space is occupied by button pad 7. There is little, if any, room left on the outside of case body 1 for a camera in the *Nagasawa* device. Further, hinge 3 in Figure 3A is shown to have a greater thickness than either case body 1 or case body 2, demonstrating to a POSITA that the space constraints require the camera to be placed in the hinge. A POSITA would recognize that attempting to add a camera on each side of case body 1, if even possible, would result in case body 1 being of greater size. Petitioner's own reference used to show knowledge of a POSITA, Exh. 1019 demonstrates this. A POSITA would also understand that a thicker phone is less desirable as it would be uncomfortable to hold and carry.

155. *Nagasawa* describes, “[u]nfolding the first case body 1 causes controller mentioned later to display text and graphics information on the second display 8 on the inner surface of the first case body. In the meantime, the first display

4 maintains the state assumed before the main body 1 was unfolded upward.” Exh. 1007, 4:13-16. When the phone is open, the first display is no longer used, and all functionality for the phone is oriented on the inner surface. There is no motivation to place a camera on the side with the first display because when the phone is open, it would only function, at most, as *Harma* functions, with two cameras and one active screen. *Nagasawa* only has one screen functioning at a time. This is opposed to having a second screen as depicted in figure 6 of the ’168 Patent and claim 21 that can function simultaneously.

156. Further, *Harma*’s camera has a focal length of 50 to 300 cm, see Exh. 1006, 5:2-3, resulting in the person having to be 50-300 cm from the display on the outside of *Nagasawa* if using *Harma*’s camera. The screen would be useless because the user would not be able to effectively use the display from a distance of 300 cm away.

157. The Petition states that a configuration with screens on both sides and cameras on both sides “would have had obvious marketing and commercial benefits.” Pet. 56. If there is such marketing and commercial demand, it is the Patent Owner who came up with the solution as claimed in the ’168 Patent, and the statement demonstrates the value and unmet need for the device of the ’168 Patent.

158. It is my opinion that there would have been no motivation to combine *Nagasawa* and *Harma* references. Even if such a combination is possible, claim elements would still be missing.

159. Furthermore, *Harma's* priority date is after the filing date of the '162 Provisional Patent Application. Similarly, *Nagasawa's* priority date of November 3, 2000, is after the priority date of the '162 provisional patent application. There can be no motivation to combine *Nagasawa* with *Harma* because both *Nagasawa* and *Harma* are not prior art to the '162 Provisional Patent Application.

2. Independent Claim 18

- a. **[18c]: “at least one first input device and first display device configured to allow the at least one user to input and output visual information wherein the at least one first input device and first display device resides on the first side of the housing”**

160. The camera on the first side of the *Nagasawa* phone is located on a hinge and not the housing. Exh. 1007, Fig. 12B. Petitioner asserts that there was no reason for *Nagasawa* to place the camera in the hinge, and it can be moved and placed on one side of the housing. See Pet. 60. The Ground is *Nagasawa* in view of *Harma*, Pet. 50, but the argument is switching between that combination and *Harma* in view of *Nagasawa*, with the teachings of *Nagasawa* being disregarded.

161. The Petitioner's logic is that *Harma* has two cameras; it would be obvious to remove Nagasawa's camera and place *Harma*'s cameras anywhere in *Nagasawa*. See Pet. 60. Such an approach fails to acknowledge that there is a reason for the inventors of *Nagasawa* to place the camera on the hinge. Since *Nagasawa* has demonstrated in the figures that the camera is located in the widest portion of the phone, the camera cannot be placed anywhere other than the hinge and not on the thinnest part of the phone (first case body (1)). See *supra* ¶164.

162. Further, placing a camera on the second side of the housing would add an element that is not related to gaming (display and controllers) on the “outer surface of the first case body (1).” See Exh. 1007, Abstract. Only items related to gameplay are placed on the second side of the housing.

163. It is my opinion that a camera could not be placed on one side of the first case body of *Nagasawa* because there is no room, and only items related to gameplay are located on the second side of the housing, let alone on both sides.

- a. **[18e]: “wherein the first and second input devices and first display devices are carried by the housing in an orientation to allow the at least user to access the at least one first input device and first display device from the first side of the housing at the same time as the at least one second input device from the second side of the housing**

164. As previously stated, it is my opinion that a camera could not be placed on one side of the first case body of *Nagasawa*, let alone on both sides. *See supra* ¶¶141-144.

165. If the camera from *Harma* was placed on the one side of the first case body of *Nagasawa*, it would be a camera that is for still photographs or to record video clips. *See supra* ¶¶57-60. The camera is not for real-time or near real-time video information. Further, there is no information as to how much power additional cameras would require, the size of *Harma*'s cameras compared to *Nagasawa*. The amount of additional memory that would be required by having a second camera, and how using extra memory for cameras would affect the memory for game playing, as that is the focus of *Nagasawa*.

166. It is my opinion that the combination of *Nagasawa* in view of *Harma* fails to teach all of the elements of claim 18 because the camera of *Nagasawa* cannot be moved from the hinge, and if it is possible to place a camera on the outside of the first case body it would not be on the same housing as the camera on the hinge.

3. Claim 19 – “The communication service device as claimed in claim 18, wherein the first side of the housing and the second side of the housing face mutually opposite directions”

167. Claim 19 is a dependent claim and incorporates all the elements of independent claim 18. *See supra* ¶¶156-162.

168. In Figures 2A and 4A of *Nagasawa*, the open phone does not reside in a plane. The hinge faces in one direction, and if a camera can be placed on the outside of the first case body, the camera does not face in a mutually opposite direction.

169. It is my opinion that *Nagasawa*, in view of *Harma*, fails to teach all the elements of claim 19.

4. Claim 20 – “The communication services device as claimed in claim 18, wherein the first input device comprises a first camera, and where the second input device comprises a second camera”

170. Claim 20 is a dependent claim and incorporates all the elements of independent claim 18.

171. If the camera from *Harma* was placed on the one side of the first case body of *Nagasawa*, it would be a camera that is for still photographs or to record video clips. *See supra* ¶¶57-60. The camera is not for real-time or near real-time video information.

172. It is my opinion that *Nagasawa*, in view of *Harma*, fails to teach all the elements of this claim. *See supra* ¶¶160-166.

5. Claim 21 – “The communication services device as claimed in claim 19 includes, a second display device residing on the second side of the housing

173. Claim 21 is a dependent claim incorporating all the elements of independent claims 18 and 19. *See supra* ¶¶160-169.

174. It is my opinion that *Nagasawa*, in view of *Harma*, fails to teach all the elements of this claim. *See supra* ¶¶160-169.

175. It is my opinion that claims 18-21 are not obvious in view of *Nagasawa* and *Harma*, as presented in Ground 4, because there is no motivation to combine the references, all of the claim elements are not found in the combination, and *Harma* and *Nagasawa* are not prior art and do not predate the priority date of the Provisional Patent Application.

This is the END of my Declaration.

176. In signing this Declaration, I recognize that the Declaration may be filed as evidence in a contested case before the PTAB. I also acknowledge that I may be subject to cross-examination in the case and that cross-examination will occur within the United States. If cross-examination is required of me, I will cooperate to the best of my ability to appear for cross-examination during the time allotted.

177. I reserve the right to supplement my opinions in the future to respond to any arguments that the Petitioner raises and to take into account new information as it becomes available to me.

178. I declare that all the statements made in this Declaration are of my own knowledge and true; that all statements made on information and belief are believed to be true; and further that these statements herein 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.

179. I declare to the best of my ability under the penalty of perjury that all statements made in this Declaration are true and correct.

DECLARATION OF DR. THEOGARAJAN
IN OPPOSITION TO PETITION FOR
IPR2025-00101, U.S. PATENT NO. 10,499,168

Executed: February 21, 2025, in Santa Barbara, California.



Luke Theogarajan

APPENDIX A

Curriculum Vitae of Professor Luke Theogarajan

RESEARCH AREAS

Recombinant Proteins for sensing, CMOS VLSI, High Speed circuit design, Ultra low-power CMOS circuits for biomedical applications, Neural prostheses, energy efficient circuit design techniques for Photonics, Nanoscale physics for biomedical applications, Nano/microfabrication for biomedical applications.

EDUCATION

Ph. D (EECS), Massachusetts Institute of Technology (2007)

M. S. (EE), Arizona State University (1996)

B.E. (E & C), Manipal Institute of Technology, Manipal, India (1994)

RESEARCH CAREER

2017-Present University of California, Santa Barbara

Dept. of Electrical & Computer Engineering,
Vice-Chair

2016-Present University of California, Santa Barbara

Dept. of Electrical & Computer Engineering,
Professor

2012-2016 University of California, Santa Barbara

Dept. of Electrical & Computer Engineering,
Associate Professor

2008-2012 University of California, Santa Barbara

Dept. of Electrical & Computer Engineering,
Assistant Professor

2007-2008 Massachusetts Institute of Technology, EECS Dept.

Post-Doctoral Associate, Soft-Semiconductor Group, Prof. Marc Baldo

2007 Massachusetts Institute of Technology, EECS Dept.
 Corbato Research Fellow

2002–2007 Massachusetts Institute of Technology, EECS Dept.
 Catalyst Foundation Fellow, Retinal Implant Project, Prof. John Wyatt

2001 Massachusetts Institute of Technology, EECS Dept.
 Graduate Research Assitant, Retinal Implant Project, Prof. John Wyatt

2000–2001 Intel Corporation, Network Processor Division
 Senior Hardware Engineer

1996–2000 Intel Corporation, Performance Microprocessor Division
 Senior Design Engineer

AWARDS

- 2017 Co-recipient Outstanding Faculty Award for the Academic Year, ECE Dept. UCSB
- 2013 Outstanding Faculty Award for the Academic Year, ECE Dept., UCSB
- 2012 Outstanding Faculty Award for the Academic Year, ECE Dept., UCSB
- 2011 NSF CAREER Award 2011
- 2011 Regents Junior Faculty Fellowship
- 2011 Northrup Grumann Excellence in Teaching Award 2011
- 2011 Outstanding Faculty Award, ECE Dept., UCSB
- 2010 NIH Director's New Innovator Award
- 2010 Outstanding Faculty Award for the Academic Year, ECE Dept., UCSB
- 2009 Co-recipient Outstanding Faculty Award, ECE Dept., UCSB
- Catalyst Foundation Fellowship (01/03-01/07)
- 2000 Division Recognition Award, Desktop Products Group, Intel Corp.

PATENTS

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- “A Method And Apparatus For Generating Boundary Markers For An Instruction Stream Including Variable Length Instructions”, L. Theogarajan, K. Diep and J. Dukes, Patent No. 6,308,257, issued 10/23/01.
- “A High Voltage Tolerant Differential Receiver In A Low Voltage Process”, L. Theogarajan, Patent No. 6,686,778, issued 11/1/2005.
- “Minimally Invasive Retinal Prosthesis” J. F. Rizzo, J. Wyatt, L. Theogarajan, Patent No. 6,976,998, 12/20/2005

PROFESSIONAL CONTRIBUTIONS

- Co-founder Laxmi Therapeutic Devices
- Consultant: Blue Novo Biosystems, Quantapore and Laxmi Therapeutic Devices

TEACHING

- Analog VLSI
- Mixed Signal VLSI
- Digital VLSI
- Circuit & Electronics
- Communication Electronics
- Circuits, Devices and Systems

PUBLICATIONS

BOOK CHAPTER

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