

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC.,
PETITIONER,

v.

GOTV STREAMING, LLC,
PATENT OWNER.

CASE IPR2023-00759
PATENT 8,103,865

DECLARATION OF STUART LIPOFF

EXHIBIT

2005

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CURRENT EXHIBIT LIST

No.	Brief Description
1001	U.S. Patent No. 8,103,865
1002	Expert Declaration of Ben Bederson (“Bederson”)
1003	Curriculum Vitae of Benjamin B. Bederson, Ph.D.
1004	File History of U.S. Patent No. 8,103,865
1005	U.S. Patent Application Publication No. 2007/0150617 (“Hariki”)
1006	U.S. Patent Application Publication No. 2003/0023755 (“Harris”)
1007	U.S. Patent Application Publication No. 2003/0137539 (“Dees”)
1008	Reserved
1009	U.S. Patent No. 7,447,486 (“Tamura”)
1010	U.S. Patent No. 6,996,627 (“Carden”)
1011	U.S. Patent No. 6,669,564 (“Young”)
1012	U.S. Patent No. 6,732,183 (“Graham”)
1013	U.S. Patent No. 6,507,727 (“Henrick”)
1014	Webpage excerpt from Computer History Museum at https://www.computerhistory.org/tdih/april/6/ (last accessed March 29, 2023)
1015	https://www.webdesignerdepot.com/2009/05/the-evolution-of-cell-phone-design-between-1983-2009/
1016	Excerpts from Dan R. Olsen, Jr., Developing user interfaces (1998)
1017	Alok Sinha, Client-server computing, in Communications of the ACM, 35, 7 (1992)
1018	Tim Berners-Lee, Robert Cailliau, Ari Luotonen, Henrik Frystyk Nielsen, and Arthur Secret, The World-Wide Web. Communications of the ACM 37, 8 76-82 (August 1994), available at http://dx.doi.org/10.1145/179606.179671
1019	Eric Kasten, HTML: A Gentle Introduction, Linux Journal (July 1995),
1020	U.S. Patent Application Publication No. 2013/0124961 (“Linburn”)
1021	U.S. Patent No. 8,111,326 (“Talwar”)
1022	Order re Scheduling Conference, <i>GoTV Streaming, LLC v. Netflix, Inc.</i> , 2:22-cv-07556 (C.D. Cal. issued Feb. 13, 2023) (Doc. 61)
1023	Complaint in <i>GoTV Streaming, LLC v. Netflix, Inc.</i> , No. 2:22-cv-07556-RGK-SHK (C.D. Cal. October 17, 2022)

No.	Brief Description
1024	https://web.archive.org/web/20070406171650/http://www.zenzui.com/products.html
1025	Bert Boss, <i>A brief history of CSS until 2016</i> , W3 Blog (Dec. 17, 2016), https://www.w3.org/Style/CSS20/history.html
1026	Eric A. Meyer, <i>Cascading Style Sheets – The Definitive Guide</i> (O’Reilly, 2d ed. 2004)
1027	JavaScript, Wikipedia (Aug. 12, 2004), https://web.archive.org/web/20040812085853/http://en.wikipedia.org/wiki/JavaScript
1028	Document Object Model (DOM) Level 1 Specification Version 1.0, W3C Recommendation (Oct. 1, 1998), https://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/DOM.pdf
1029	ECMAScript: A general purpose, cross-platform programming language, Standard ECMA-262 (June, 1997), https://www.ecma-international.org/wp-content/uploads/ECMA-262_1st_edition_june_1997.pdf
1030	Peter-Paul Koch, <i>The Document Object Model: an Introduction</i> , Digital Web Magazine (May 14, 2001), https://www.digital-web.com/articles/the_document_object_model/
2001	CAMPBELL-KELLY ET AL., <i>Mainframes to Smartphones: A History of the International Computer Industry</i> , Ch. 11 (Harvard Univ. Press 2015)
2002	GALAZZO, <i>Timeline from 1G to 5G: A Brief History on Cell Phones</i> (Sept. 21, 2020), <i>available at</i> https://www.cengn.ca/information-centre/innovation/timeline-from-1g-to-5g-a-brief-history-on-cell-phones/
2003	Cingular MEdia Mall Games and Motorola Page (March 23, 2016), <i>available at</i> https://web.archive.org/web/20060323054853/http://www-xl.cingularextras.com/fuel/enduser/portal/endUserHTMLDir?c1=3&dc=0 and https://web.archive.org/web/20060323054841/http://www-xl.cingularextras.com/fuel/enduser/portal/endUserHTMLSelectPhone?makeName=motorola&dc=0

No.	Brief Description
2004	Declaration of Joshua S. Wyde regarding authentication of exhibits (Aug. 17, 2023)
2005	Intentionally Left Blank
2006	Order on Motions for Summary Judgment, <i>GoTV Streaming, LLC v. Netflix, Inc.</i> , 2:22-cv-07556 (C.D. Cal. issued Sept. 11, 2023) (Doc. 249)
2007	Tailored, Cambridge Dictionary, <i>available at</i> https://dictionary.cambridge.org/dictionary/english/tailored?q=tailored_1 (last visited Dec. 18, 2023).
2008	Discrete, Merriam-Webster.com Dictionary, <i>available at</i> https://www.merriam-webster.com/dictionary/discrete (last visited Dec. 13, 2023)
2009	Discrete, American Heritage Dictionary, <i>available at</i> https://www.ahdictionary.com/word/search.html?q=discrete (last visited Dec. 13, 2023)
2010	Discrete, Merriam-Webster's Collegiate Dictionary (1998)
2011	Application-Specific, Wiktionary, <i>available at</i> https://en.wiktionary.org/wiki/application-specific (last visited Dec. 15, 2023)
2012	Eliminate, The American Heritage Dictionary of the English Language, <i>available at</i> https://www.ahdictionary.com/word/search.html?q=eliminate (last visited Dec. 19, 2023)
2013	U.S. Patent Application No. 60/256,589 (Harris Provisional)
2014	Deposition of Dr. Benjamin Bederson (Jan. 10, 2024) ¹
2015	Petition, Netflix, Inc. v. GoTV Streaming, LLC, IPR2023-00757 (PTAB filed Apr. 7, 2023) (Paper 2) ("757 Petition")
2016	Second Declaration of Joshua S. Wyde regarding authentication of exhibits (Jan. 26, 2024)

¹ Per Party agreement, Dr. Bederson's deposition was a consolidated deposition regarding U.S. Patent Number 8,989,715 in IPR No. IPR2023-00757; Patent No. 8,478,245 in IPR No. IPR2023-00758; and U.S. Patent No. 8,103,865 in IPR No. IPR2023-00759.

CLAIM LISTING

	Limitation
1[pre]	1. A server implemented method for processing data for a wireless device, comprising:
1[a]	receiving from the wireless device a request for an application program, said request including an indication of a type of the wireless device;
1[b]	executing, in response to receiving said request, said application program to generate a wireless device generic template including a plurality of content items;
1[c]	sending a custom configuration to the wireless device, said custom configuration being specific to said application program;
1[d]	generating a page description based on said wireless device generic template and a capability of the wireless device,
1[e]	said page description having at least one discrete low level rendering command that is within said rendering capability of said wireless device but that is of a syntax that is wireless device generic; and
1[f]	sending said page description to the wireless device such that the wireless device is capable of presenting at least one content item from said plurality of content items using both said page description and said custom configuration.
2	2. The method of claim 1, wherein said wireless device generic template includes relative screen location and display object size information and is independent of screen dimensions of the wireless device.
3	3. The method of claim 1, wherein said wireless device generic template is substantially compliant with extensible markup language (XML) syntax.
4	4. The method of claim 1, wherein said at least one discrete low level rendering command of said page description is operable to be executed by a plurality of rendering blocks of a graphical user interface of the wireless device.
5	5. The method of claim 4, wherein said at least one discrete low level rendering command includes a physical screen position of a display element of said at least one content item.
6	6. The method of claim 4, wherein said at least one discrete low level rendering command includes: a specification of a location and a size of a screen area; and an identification of a rendering block from said plurality of rendering blocks of said graphical user interface to operate within said screen area.

	Limitation
7	7. The method of claim 6 , wherein said at least one discrete low level rendering command includes parameters associated with said rendering block from said plurality of rendering blocks.
8	8. The method of claim 1 , wherein said page description includes at least one display rendering command and at least one audio rendering command.
9	9. The method of claim 1 , wherein said application program is wireless device generic and said wireless device generic template is a wireless device generic page description template.
10	10. The method of claim 1 , wherein the wireless device is operable to configure a plurality of rendering blocks of a graphical user interface based on said custom configuration.
11	11. The method of claim 1 , wherein said server stores a plurality of device profiles, said method further comprises: identifying a device profile from said plurality of device profiles associated with the wireless device based on said type of said wireless device.
12[pre]	12. A non-transitory processor-readable medium storing code representing instructions to cause a processor to:
12[a]	receive a request for an application program from a wireless device, said request including an indication of a type of the wireless device;
12[b]	execute said application program to generate a wireless device generic template including a plurality of content items;
12[c]	request, using said indication of said type of the wireless device, a device profile from a library of device profiles,
12[d]	said device profile providing an indication of a rendering capability of the wireless device;
12[e]	eliminate, using said device profile, at least one content item from said plurality of content items from said wireless device generic template to define a device specific template associated with the wireless device,
12[f]	said at least one content item being unsupported by the wireless device;
12[g]	translate said device specific template into a page description having at least one discrete low level rendering command that is within said rendering capability of the wireless device but that is of a syntax that is wireless device generic; and
12[h]	send said page description to the wireless device.
13	13. The non-transitory processor-readable medium of claim 12 , wherein said wireless device generic template contains relative screen location and display object size information independent of screen dimensions of the wireless device.

	Limitation
14	14. The non-transitory processor-readable medium of claim 12 , wherein said wireless device generic template is substantially compliant with extensible markup language (XML) syntax.
15	15. The non-transitory processor-readable medium of claim 12 , wherein said at least one discrete low level rendering command of said page description is operable to be executed by a plurality of rendering blocks of a graphical user interface of the wireless device.
16	16. The non-transitory processor-readable medium of claim 15 , wherein said at least one discrete low level rendering command includes a physical screen position of a display element of a content item from the plurality of content items.
17	17. The non-transitory processor-readable medium of claim 15 , wherein said at least one discrete low level rendering command includes: a specification of a location and a size of a screen area; and an identification of a rendering block from said plurality of rendering blocks of said graphical user interface.
18	18. The non-transitory processor-readable medium of claim 17 , wherein said at least one discrete low level rendering command includes at least one parameter associated with said rendering block from said plurality of rendering blocks.
19	19. The non-transitory processor-readable medium of claim 12 , wherein said page description includes at least one display rendering command and at least one audio rendering command.
20[a]	20. The non-transitory processor-readable medium of claim 12 , further comprising code representing instructions to cause said processor to: send, in response to said request, a custom configuration to said wireless device,
20[b]	the wireless device is operable to configure a plurality of rendering blocks of graphical user interface based on said custom configuration.
31	31. The method of claim 1 , wherein the sending the custom configuration to the wireless device is in response to receiving an indication from the wireless device that the custom configuration is not stored at the wireless device.
34[a]	34. The non-transitory processor-readable medium of claim 12 , further comprising code representing instructions to cause the processor to: send a custom configuration to the wireless device, said custom configuration being specific to said application program,
34[b]	the wireless device operable to present a content item from said plurality of content items using said page description and said custom configuration.

I. INTRODUCTION²

¶1. My name is Mr. Stuart Lipoff. I have been retained by GoTV Streaming, LLC, (“Petitioner” or “GoTV”) to provide my expert assessment and technical opinions in connection with the above captioned inter partes review (“IPR”) of U.S. Patent No. 8,103,865 (“’865 Patent” or “Patent-at-Issue”), Ex. 1001.

¶2. Specifically, I will provide my opinion regarding Claims 1–20, 31, and 34 (“Challenged Claims”) over U.S. Patent Application Publication No. 2007/0150617 (“Hariki”) in view of U.S. Patent Application Publication No. 2003/0023755 (“Harris”) and in further view of U.S. Patent Application Publication No. 2003/0137539 (“Dees”).

¶3. This declaration is based on information currently available to me. I reserve the right to expand, modify, or supplement my opinions if I become aware of evidence or information that was not available for review at the time I drafted this declaration.

¶4. GoTV is paying me at a rate of \$375 per hour plus expenses for my study and testimony in this case. This compensation is not contingent upon my performance, the outcome of this IPR, or any issues involved in or related to this IPR.

² All emphasis is added in this report unless otherwise noted.

II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS

¶5. I have attached my resume as Appendix A to this declaration. While my resume summarizes my educational background and work history, I will now expound upon my qualifications and professional background related to the field of wireless communication systems for rendering applications on a wireless device, distributed software applications that have a graphical user interface, and related applications and technology.

¶6. I have bachelor's degrees in electrical engineering and in engineering physics, both from Lehigh University. I also have a master's degree in electrical engineering from Northeastern University, and an MBA degree from Suffolk University.

¶7. I was employed for 25 years by Arthur D Little, Inc. as VP and Director of Communications, Information Technology, and Electronics ("CIE"), where I was responsible for the firm's global CIE practice in laboratory-based contract engineering, product development, and technology-based consulting.

¶8. I was employed by Bell & Howell Communications Company for four years as a Section Manager.

¶9. I was employed by Motorola's Communications Division for three years as a Project Engineer.

¶10. At both Bell & Howell and Motorola, I had project-design responsibility for wireless communications devices with graphical user interfaces controlled by remote terminal servers.

¶11. I have extensive experience—over a 50-year period—working on legacy and modern applications that relate to the subject matter of the challenged patents involving the delivery of remote information and multimedia content to be rendered on intelligent devices.

¶12. For Comcast Corporation, I supported a number of their initiatives in public network wireless services. This support included identifying applications and the supporting technologies to add value beyond basic voice services.

¶13. For Securus, a provider of pay per call alternate operator services to prison inmates, I evaluated their technology and assets with an emphasis on their ability to associate calling and calling party phone numbers with databases combined with their employees with multiple language skills. Following this evaluation, I worked with the client to identify and plan for offering services to clients other than prison inmates. Examples of such clients included government operated call centers, hospitals, police departments, and telephone catalog sales call centers making use of intelligent rendering engines in cellphones.

¶14. For International Mobile Machines (“IMM”), a firm that licenses patents to cellphone OEMs, I developed a roadmap of future services, architectures,

and technology to support alternative visions of the development of cellular. I then worked with the firm to generate R&D projects designed to increase the base of patents for IMM to license in the future. The service concepts I generated employed technologies supported distributed software applications that have a graphical user interface.

¶15. For International Finance Corporation (the venture capital group of The UN's World Bank), I evaluated an investment opportunity in Cellon Inc, a PRC based cellphone design house. This project included inspection of Cellon's facilities in the PRC and France as well as detailed review of Cellon's facility assets, technology strengths, and intellectual property. Of particular focus was Cellon technology to support enhanced services with graphic user interfaces.

¶16. For the patent and licensing division of The General Electric Company, I evaluated a number of patent portfolios in the wireless telecommunications space and provided feedback to the client on the application and value of these patents.

¶17. For Tele2 (a pan European cellular and wireline telephone company), I supported Tele2's efforts to procure an advanced cordless telephone from contract manufacturers in China ("PRC"). This involved development of detailed technical specifications, coordination of a request for information, ("RFI"), and evaluation of the responses. The devices were all enhanced to provide non-voice services.

¶18. For Millicom International (a cellular provider in several developing nations), I studied capital spending and developed best practice benchmarks. The work products were then employed in forward planning and to develop strategies for improvement of their financial performance. The project involved the collection of data from over 25 systems in 12 countries and developing capital efficiency metrics that were normalized to the specific geographic and demographic specifics of each system. The project not only provided a measure of present and historical capital efficiency but also provided a management system for future deployment.

¶19. For the banks providing financing to The Iridium Mobile Satellite Service, I served as a technical advisor and assisted in developing the contracts between the banks and Motorola in which Motorola secured the loan. As a technical advisor, I had extensive day-to-day interactions with Motorola's manufacturing and product design organizations. The interactions included examination of the manufacturing cost, methods, and processes of Motorola's Subscriber Products Group including voice and data applications of cellphones, pagers, and related portable wireless data communications devices.

¶20. For Sony USA, I supported a feasibility analysis of a planned investment by Sony into a wireless PCS carrier in the USA. This involved the development of advanced concepts employing distributed software applications that have a graphical user interface and exploring alternative business models, financial

analysis, and technical analysis in order to determine financial attractiveness and risk of proceeding with the venture.

¶21. For Samsung Electronics Global Marketing, I developed a strategic framework for a line of portable and personal multimedia products to be introduced in the USA. The project included developing a common theme for a set of products that ranged from cellphones, MP3 music players, electronic books, PDAs, to hand-held games. One common theme was developed, product features and capabilities were detailed, and market adoption models were developed to forecast demand.

¶22. For Korea Mobile Telephone (“KMT”), I supported the project that developed a strategic plan to position KMT relative to Korea Telecom by enhancing their service offerings to support distributed software applications that have a graphical user interface.

¶23. For Symbol Technology, a manufacturer of hand-held industrial computing products, I co-developed the protocol for a wireless local area network that was the basis for the current IEEE 802.11 wireless LAN standard. Later I worked with this same client to select voice over internet protocol (“VoIP”) codecs and algorithms that support the client’s current product offering including cordless industrial voice telephony over a quality of service (“QoS”) managed wireless IP network.

¶24. I helped lead the project for CableLabs that studied the technology and economics of wireless personal communications technology. This project is highlighted in the history of CableLabs in their website as one of the significant accomplishments of “The Labs.” The project included the selection of CDMA technologies and the development of strategies to compete with incumbent cellular carriers including the offering of non-voice multimedia services. This effort led to the formation of a consortium between Sprint and the cable MSOs that has evolved into the present Sprint PCS business.

¶25. For Cambridge Silicon Radio (UK) (“CSR”), I worked with the client to develop a prioritized list of applications for their Bluetooth component offerings. The project mapped applications into specific target customers and was based upon an analysis that considered the market needs with CSR’s capabilities, a prioritized roadmap of products was developed to steer the R&D portfolio. A major focus of this effort was to identify Bluetooth applications for data transfer for multimedia display applications.

¶26. For the investors in Mitel Semiconductor (Canada), I assisted the client in valuing their telephone and business phone system telecommunications semiconductor device products and know-how in the firm. The project required a competitive review of Mitel Products and technology, and evaluating the future likely needs of the marketplace. The scope of the project included supporting

graphics displays on the desktop phone for delivery of multimedia information such as weather and stock prices. My recommendations indicated which products should be the basis of further investment and most likely to be valued in a sale or licensing.

¶27. For TRW, I participated in an assignment which reviewed all their non-classified military and defense technology to identify commercial applications. A number of systems I reviewed included applications in security for wireless communications and antifraud that were developed and which became the basis for successful spin-off operations.

¶28. For a corporate cross-sector event organized by Motorola Corporate for all their divisions, I prepared presentations on the visions of the future in each of the major sectors in which Motorola has an interest. The presentations included: consumer electronics, medical, automotive, industrial electronics, and communications. The presentations provided a basis for the cross-sector teams to engage in long term planning for each division.

¶29. For Bell South, I contributed to a major operations improvement project involving developing forecasts for the future competitive environment, customer needs, a strategy to compete, and new business models. The scope of this project included planning for videotex delivery from Bell South servers to consumer desktop videotex terminals. These forecasts were then applied to develop business redesign recommendations and a list of new services offerings.

¶30. I am a registered professional engineer (by examination) in The Commonwealth of Massachusetts and the State of Nevada. I also hold an FCC General Radiotelephone License and a Certificate in Data Processing from the Association of Computing Machinery (“ACM”)-supported Institute for the Certification of Computing Professionals.

¶31. I am a fellow of the Institute of Electrical and Electronics Engineers (“IEEE”) Consumer Electronics, Communications, Computer, Circuits, and Vehicular Technology groups. I am also a member of the IEEE Consumer Electronics Society Board of Governors (i.e., board of directors), and was the Boston Chapter Chairman of the IEEE Vehicular Technology Society. I served as President of the IEEE Consumer Electronics Society from 1996 to 1997 and as Chairman of the Consumer Electronics Society Technical Activities and Standards Committee, as VP of Publications, and most recently at VP of Industry Activities and Standards for The IEEE Consumer Technology Society (formerly Consumer Electronics Society). I am currently the historian for The Society. I have also chaired the search committee for the Sony-supported Mazura Ibuka Award in consumer electronics.

¶32. In my capacity as a fellow of the IEEE Consumer Technology Society, I have chaired conference panels sessions and reviewed papers submitted for publication dealing with all manner of advanced business and consumer multimedia

systems involving distributed software applications that have a graphical user interface.

¶33. As Vice President and Standards Group Chairman of the Association of Computer Users (“ACU”), I served as the ACU representative to the ANSI X3 Standards group. For the Federal Communications Commission’s Citizens advisory committee on CB radio (“PURAC”), I served as Chairman of the task group on user rule compliance. I have also been elected to membership in the Society of Cable Television Engineers, ACM, and the Society of Motion Picture and Television Engineers.

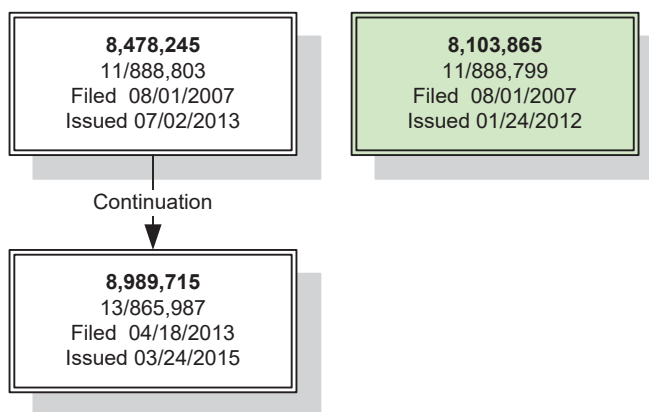
¶34. I am listed as an inventor/co-inventor on the following U.S. patents:

ID	Title	Filing Date
US-8200291-B2	Vehicle safety device for reducing driver distractions	7/23/2008
US-RE44274-E	Ubiquitous imaging device based check image capture	3/14/2012
US-2005108096-A1	Portable electronic authorization system and method	10/20/2004
US-2005116026-A1	Portable electronic authorization system and method	11/12/2004
US-2012252350-A1	Vehicle safety device for reducing driver distractions	6/11/2012
US-2009212110-A1	Virtual barcodes	9/15/2008
WO-2005043438-A1	Portable electronic authorization system and method	10/20/2004
US-5692093-A	Method and apparatus for eliminating television commercial messages	1/4/1994

ID	Title	Filing Date
US-5455630-A	Method and apparatus for inserting digital data in a blanking interval of an RF modulated video signal	8/6/1993
EP-0693215-B1	Method and apparatus for eliminating television commercial messages	1/6/1994
US-4529941-A	FSK Demodulator utilizing multiple-phase reference frequencies	11/29/1982

III. FAMILY

¶35. The Patent-at-Issue is part of a group of related patents shown as follows.



All three patents share substantially the same specification.

IV. RELEVANT TIME

¶36. I have been asked to assume that the Patent-at-Issue has an effective priority date of August 1, 2007 (“Effective Priority Date”).

V. LEVEL OF ORDINARY SKILL IN THE ART

¶37. I understand that Petitioner has proposed that “[a] person of ordinary skill in the art (‘POSITA’) at the Effective Priority Date for the ‘865 Patent would

have had a bachelor's degree in electrical or computer engineering, or a closely related scientific field such as computer science, and two years of work experience with remote page display rendering and/or remote server applications. Alternatively, any lack of work experience could be remedied with additional education (e.g., a Ph.D.) concentrating on multimedia content transmission and/or remote server applications, and likewise, a lack of education can be remedied with additional work experience in multimedia content transmission and/or remote server applications (e.g., 4-5 years)." Pet. 9–10 (citing Ex. 1002, Bederson Dec'1 ¶38).

¶38. I further understand that Patent Owner generally concurs with Petitioner that a POSITA would have an electrical/computer engineering degree or a degree in a closely related field, and Patent Owner's view is that the POSITA would have a couple of years' experience in the "field of wireless communication systems" and "[m]ore particularly, . . . method[s] and system[s] for rendering applications on a wireless device." *See* Ex. 1001, 1:13–16. Likewise, Patent Owner concurs that more education may substitute for experience, and vice versa.

¶39. And I understand that for the institution decision the Board has "generally adopt[ed] Petitioner's definition of the level of ordinary skill in the art, but add[ed] that the work experience is in the technical field defined in the '865 Patent." Inst. Dec. 8 (citing Ex. 1001, 1:13–16).

¶40. I have considered both proposals, and my analysis would not change under either.

¶41. It is my opinion that I would at least qualify as a person of ordinary skill in the art at the relevant time under the above description, and that I exceed this level of knowledge, experience, and education so that I am qualified to provide an expert opinion in this proceeding.

¶42. I have approached my validity analysis from the perspective of one of ordinary skill in the art as of the Effective Priority Date of the Patent-at-Issue.

VI. GOVERNING LAW

¶43. I am not a lawyer and am not providing any legal opinions. However, I have been informed and understand that certain legal standards are to be applied by technical experts in forming opinions regarding the meaning and patentability of patent claims in an IPR as set forth below.

A. Claim Construction Generally

¶44. My understanding is that claim terms are generally given their plain-and-ordinary meaning. The plain and ordinary meaning of a term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.

¶45. Although the specification may aid in interpreting the meaning of claim language, particular embodiments and examples appearing in the specification will not generally be “read into” the claims.

¶46. Although extrinsic evidence can also be useful, it is less significant than the intrinsic record in determining the legally operative meaning of claim language. For instance, technical dictionaries may be helpful, but they may also provide definitions that are too broad or not indicative of how the term is used in the patent.

¶47. Two exceptions to the general rule that claim terms are construed according to their plain and ordinary meaning are when the patentee (1) acts as his/her own lexicographer or (2) disavows the full scope of the claim term either in the specification or during prosecution.

¶48. To act as his/her own lexicographer, the patentee must clearly set forth a definition of the disputed claim term, and clearly express an intent to define the term. To disavow the full scope of a claim term, the patentee’s statements in the specification or prosecution history must represent a clear disavowal of claim scope.

¶49. Under the doctrine of claim differentiation, each claim in a patent is presumed to have a different scope. The presumption is rebutted when, for example, the construction of an independent claim leads to a clear conclusion inconsistent with a dependent claim. The presumption is also rebutted when there is a contrary construction dictated by the written description or prosecution history. The

presumption does not apply if it serves to broaden the claims beyond their meaning in light of the specification.

B. Obviousness

¶50. I have been informed that the basis for challenging a patent in an IPR for obviousness stems from the statute 35 U.S.C. § 103(a) that reads as follows:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

¶51. My understanding of the law is that a patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed in a prior art reference (i.e., anticipated), if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.

¶52. I understand that when considering obviousness, the determination is based upon: (a) the scope and content of the prior art; (b) the differences between

the prior art and the claim; (c) the level of ordinary skill in the art; and, (d) certain objective indicators of non-obviousness, if applicable.

¶53. Objective indicators, considered in the last factor (d) of an obviousness analysis, include: (i) commercial success of products covered by the patent claims; (ii) a long-felt need for the invention; (iii) failed attempts by others to make the invention; (iv) copying of the invention by others in the field; (v) unexpected results achieved by the invention as compared to the closest prior art; (vi) praise of the invention by the infringer or others in the field; (vii) the taking of licenses under the patent by others; (viii) expressions of surprise by experts and those skilled in the art at the making of the invention; and (ix) the patentee proceeded contrary to the accepted wisdom of the prior art. I further understand that these objective indicators are only relevant if they are the result of the merits of a claimed invention, rather than the result of design needs, market-pressure, advertising, or similar activities.

¶54. I have been informed that whether there are any relevant differences between the prior art and the claimed invention is to be analyzed from the view of a person of ordinary skill in the relevant art at the time of the invention.

¶55. In analyzing the relevance of the differences between the claimed invention and the prior art, I have been informed that I must consider the impact, if any, of such differences on the obviousness or non-obviousness of the invention as a whole, not merely some portion of it.

¶56. I understand that the person of ordinary skill faced with a problem is able to apply his or her experience and ability to solve the problem and may also look to any available relevant prior art to help solve the problem. That is, the person is not an automaton, and that I may account for the inferences and creative steps that a person of ordinary skill in the art would have employed in reviewing the prior art at the time of the invention. On one hand, if the claimed invention combined elements known in the prior art and the combination yielded results that were predictable to a person of ordinary skill in the art at the time of the invention, then this evidence would make it more likely that the claim was obvious. On the other hand, if the combination of known elements yielded unexpected or unpredictable results, or if the prior art teaches away from combining the known elements, then this evidence would make it more likely that the claim that successfully combined those elements was not obvious.

C. Definiteness

¶57. I have been told that the Patent statutes require a patent to conclude with claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as the invention. Therefore, the claims, read in light of the specification delineating the patent, and the prosecution history, must inform, with reasonable certainty, to those skilled in the art the scope of the invention at the time the patent was filed.

¶58. However, the definiteness requirement considers the inherent limitations of language and some modicum of uncertainty therefore allowed. Moreover, because patents are addressed to those skilled in the relevant art, any description sufficient to apprise such persons in the language of the art of the definite feature of the invention, and to serve as a warning to others of what the patent claims as a monopoly, is sufficiently definite to sustain the patent. As such, there only need be reasonable certainty having regard to the subject-matter.

¶59. While a term may be indefinite if it is completely dependent on a person's unrestrained subjective opinion, a term is not indefinite for such subjectivity if a POSITA an objective definition identifying a standard for determining when a claim limitation is met.

VII. MATERIALS CONSIDERED

¶60. In forming my opinions expressed herein, I have considered the documents listed in the Current Exhibit List beginning on page 4. I have also considered the Petition (Paper 2) and the Institution Decision (Paper 9).

VIII. OVERVIEW OF THE PATENT-AT-ISSUE

A. Historical Context

¶61. By 2005, people were beginning to “web surf” on their smartphones; however, the Internet capabilities of existing devices were primitive because phones’ internet interfaces were designed for low-bandwidth networks. Ex. 2001, 13–14.

For instance, “3G,” launched in Japan by NTT DoCoMo in 2001, only had 2 Mbps data transferring capabilities on average, which allowed “the ability to surf the internet (basic HTML pages at the time).” Ex. 2002, at 2; *see also* Pet. 7 (characterizing 3G as capable of transferring low bandwidth type data, such as “emails and instant messages”). 3G gave rise to new smartphone form factors, such as the Blackberry (launched in 2002) shown below.



Image of the BlackBerry 5810, Ex. 2002, at 2.

¶62. “The smartphone market changed radically with the arrival of Apple’s iPhone in June 2007.” Ex. 2001, 12. The iPhone, shown below, was touted as “revolutionary” in that it was not just a phone and a music player, but an “Internet communicator” where the entire user interface of the iPhone was a touchscreen. *Id.*



Ex. 2002, at 2–3.

¶63. It was around this time, in August of 2007, that the Patent-in-Suit was filed. At the time, the wireless device marketplace offered many different mobile devices with very different hardware-specific attributes. The Panel can view the variety by perusing the pictures in the first 75 pages of Petitioner’s Exhibit 1015. Therefore, game manufacturers would provide different versions of games based upon phone maker, model, and phone capabilities as seen in the Cingular Games page circa 2006:



Ex. 2003 at 5,7.

¶64. While wireless devices were becoming more powerful, such that each device could run its own applications, interactions with servers were still very limited due to the primitive browser interfaces that were a legacy of the wireless networks' low bandwidths as described above.

¶65. Apple would not unveil its software development kit for the iPhone until March 2008 or launch its App Store until July of that same year. Ex. 2001, at 14. It was not until November 2007, that Google, T-Mobile, HTC, Qualcomm, and Motorola announced the formation of the Open Handset Alliance for the development of the Android operating system, and Google's own app store, Android

Market, was not announced until August 2008. *Id.* 15. 4G wireless networks that had a minimum of 12.5 Mbps bandwidth were not commercially introduced until 2009. Ex. 2002, at 3.

B. Subject Matter

¶66. Circa August 1, 2007, wireless devices generally ran “application[s] locally.” Ex. 1001, 2:3–5. And there were multiple types of portable wireless devices, multiple manufacturers of each type of device, multiple models from each manufacturer, and multiple versions of each model. *Id.* 1:21–32. Each particular combination of type, manufacturer, model, and version of a device potentially had unique “device attributes” (i.e., rendering capability, display resolution, color capability, display size, etc.). *Id.* 1:32–36; 11:20–31; 11:43–56.

¶67. Therefore, developers that wished to write an application to run on multiple devices and “fully utilize” each device’s attributes had to tailor versions of the application per device, building each one “from the ground up.” *Id.* 1:37–43; 51–54. Given that providers had to pay to develop, debug, and qualify every version of an application, *id.* 1:44–47, many software developers simply chose to limit their titles to a few platforms, *id.* 1:62–67.

¶68. Additionally, maintenance of an application (i.e., upgrades, updates, and patches to the code) across target platforms similarly required a costly per-device effort. *Id.* 2:1–7. And even if the application developer did provide updates,

many users failed to install the update to the locally running applications because it was a “laborious process” of “navigating through multiple pages in order to determine whether an update [was] ready” and “actively initiat[ing] the update process.” *Id.* 2:7–14.

¶69. In light of the state of application development at the time, the Patent-at-Issue contemplates a method and system for rendering centrally running remote applications on a wireless device where: (1) the application “output . . . is device specific based on the wireless device attributes,” *id.* 2:22–26, with its own “look and feel,” *id.* 7:55–63; 10:56–58; 18:37–42; yet (2) the developers can still write a “generic application” being less concerned with “tailoring their applications for a given device type,” *id.* 2:22–26. Additionally, the claimed solution allows for developers to maintain applications centrally, “eliminating the need to update/patch each application on each wireless device.” *Id.* 2:37–43.

C. Invention as Illustrated through Embodiments

¶70. The following discussion recapitulates key concepts from the Patent-at-Issue specification using concrete examples.

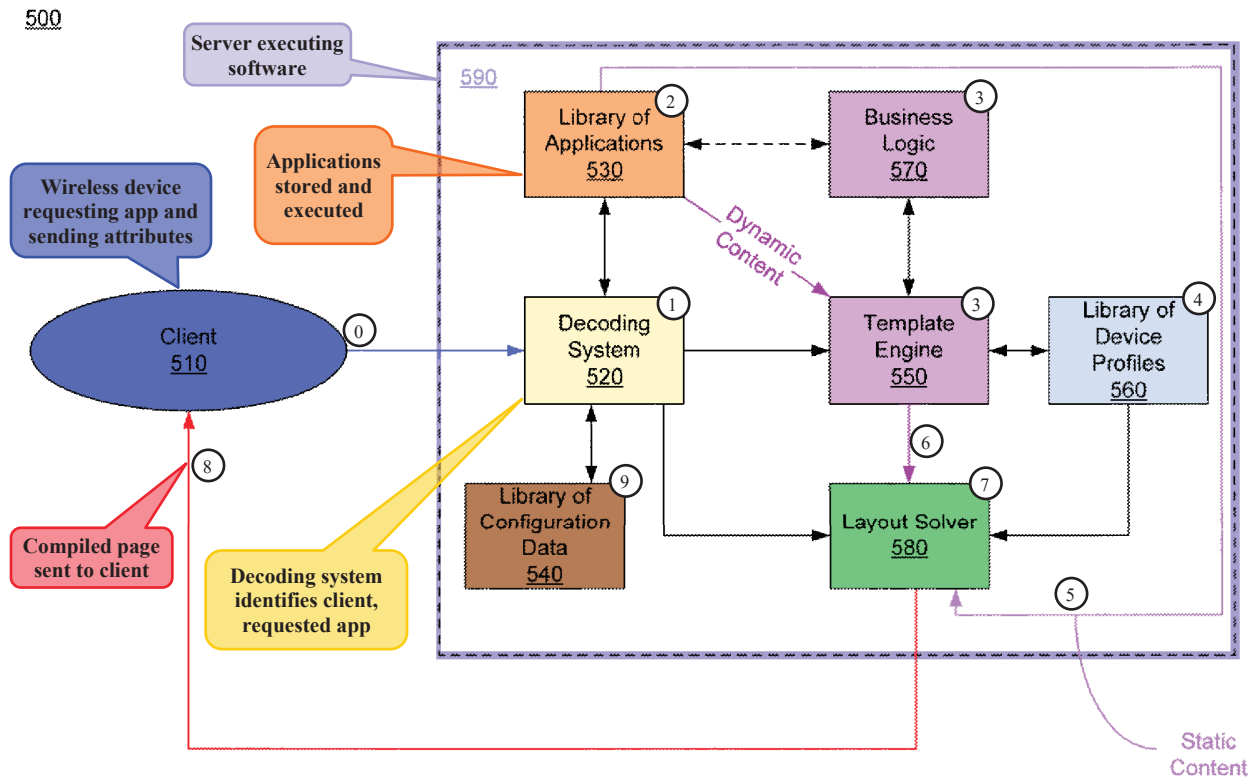
1. Applications

¶71. In the context of the Patent-at-Issue, an application can be “defined by an application description file and a set of static resources, e.g., images, sounds, URLs, etc. The application description file describes all the screens of the

application and the custom configuration of the application.” *Id.* 16:45–49. For example, an application may be all the screens, resources, and custom configurations to implement the Texas Hold’em Poker application. *Id.* 16:39–42.

¶72. The Patent-at-Issue’s applications are “stored” and “executed” “on the remote server,” *id.* 2:37–38; 2:63–64; 3:8–9; 5:54–56; 6:6–7; 16:44–45, in contrast to traditional applications that were downloaded and locally run on wireless devices.

¶74. The applications may be stored in a library of applications 530 and are executed on a remote server 590 to generate compiled content.



¶75. Ex. 1001 Fig. 5.³ At ① a client “request[s] an application [and] identif[ies] the client’s 510 type and its capabilities.” *Id.* 16:34–37. In response, at ②, the “decoding system” on the server “locate[s] and execute[s] the requested application.” *Id.* 16:39–42.

¶76. Upon execution, at ③, the application generates the pages “for display on the wireless device.” *Id.* 16:61–62. This page can contain only static content,

³ All color, balloon text, circle numbering, and annotations in figures are additions unless otherwise noted.

such as “pictures or . . . pure text.” *Id.* 16:62–66. Or this page may be a “generic template describing the screen.” *Id.* 17:3–6.

¶77. In the case of the generic template page, at ③, a “template engine,” also executing on the server, may first “merge[] screens of [the] application and dynamic data provided by the business logic” to “provide[] a high level template (e.g., extensible markup language (XML) format),” *id.* 17:6–26, and then consult the “library of device profiles,” at ④, to “eliminate content from its dynamic template output that is not supported by the client,” *id.* 17:27–39. For example, the template engine “may eliminate audio component[s] from the generic template output” when “the client 510 does not have audio capability,” or “eliminate big images” “when the client 510 is short in memory.” *Id.* 17:39–47.

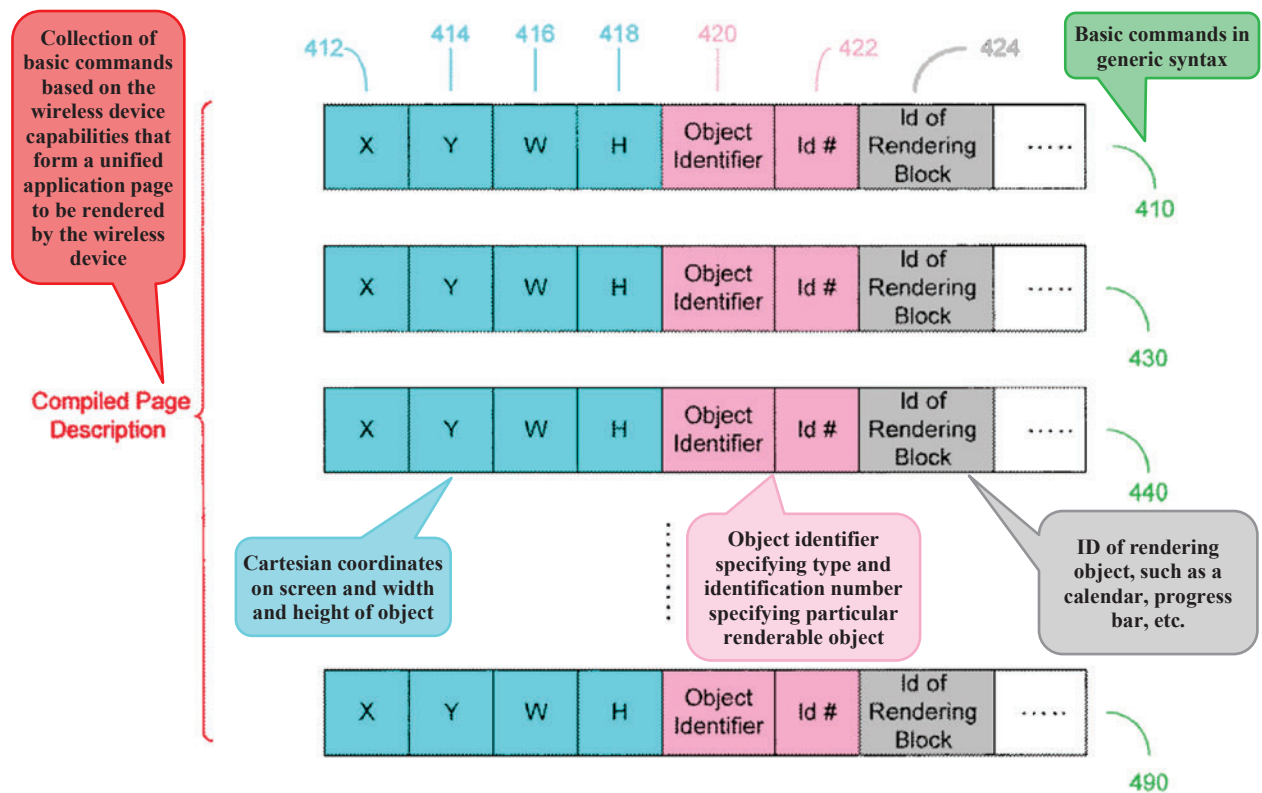
¶78. Whether the page is static (i.e., a “generic template supplied from 530,” at ⑤) or dynamic (i.e., a “template supplied from 550,” at ⑥), the generic application pages at this point “do not contain any specific or actual screen dimensions but rather only contain relative screen locations.” *Id.* 17:48–51. In this sense, they are “wireless device generic.” *Id.*

2. Compiled Content and Rendering Blocks

¶79. The Patent-at-Issue teaches that an application’s generic pages can be fed into a “layout solver,” at ⑦, that actually “translates the received information into a series of basic commands based on the client’s capabilities,” *id.* 17:53–59;

18:1–6, to create a “compiled page” that is sent to the wireless client device at ⑧, *id.* 18:11–14. Note that while the compiled page’s basic commands and their parameters are tailored to, and based on, the wireless device capabilities, the syntax of these commands is still “device generic.” *Id.* 18:7–11.

¶80. The Patent-at-Issue illustrates what a compiled page for an application may look like:



Ex. 1001 Fig. 4. The compiled page contains a series of basic commands, including 410 to 490. Note that the compiled pages may now specify actual “Cartesian coordinates 412 and 414 of a screen region” as well as “the width 416 and the height 418 of the screen region.” *Id.* 16:2–7.

¶81. The basic commands include an “object identifier” that specifies the type of “renderable component” to be displayed (e.g., a designator for “text, image, video, audio, and the like”) and an “identification number” that specifies the particular renderable component of the designated type to be rendered. *Id.* 13:27–29; 16:16–21; 15:60–62.

¶82. The render commands found in the exemplary device specific page description also include the identifications of the “rendering blocks.” Rendering blocks are conceptually part of the wireless device’s graphical user interface (“GUI”) that are “preconfigured to operate and store data” and “perform discrete rendering operations.” *Id.* 2:50–51; 4:7–11; 7:18–22. That is, the rendering blocks “render content and enable a user to interact with the requested application.” *Id.* 8:22–24. Examples of a GUI’s rendering blocks include text; a text box; an image; a pop-up, drop-down or tabbed menu; audio/video controls; a scrolling ticker; check box/radio buttons; a rating panel; poll results; a drawing canvas; a hierarchical tree; scroll bars; a progress bar; a table; a calendar; and the like. *Id.* 8:25–43. By referencing the rendering blocks that were customized by the custom configuration the rendering blocks are “applicable” to the compiled content.

¶83. The specification also notes that not all components of a basic command are shown in Figure 4, and “that basic commands may further include

other field components for additional information[,] e.g., immediate data, such as text.” *Id.* 16:26–28.

¶84. In sum, a “collection of basic commands . . . forms a single unified page to be rendered by the wireless device.” *Id.* 15:63–65.

3. Custom Configuration

¶85. As taught by the Patent-at-Issue, if the client requests to run an application, the decoding system can also “access a library of custom configuration data 540,” shown as ⑨ above, “to customize the appearance of the application” and “send the identified custom configuration to the client.” *Id.* 16:50–60.

¶86. The client can use the custom configuration to configure the GUI’s rendering blocks to set how they “operate and look” that—in aggregate—sets “the look and feel” of the application. *Id.* 7:55–63; 10:56–58; 18:40–42. For example, custom configuration data may configure the GUI rendering blocks’ fonts, colors, border thickness, images, background images, icon type/image, menu styles, sound, video, etc., *id.* 8:50–10:55, such as “customiz[ing] a ‘submit’ icon to look like an airplane flying away when pressed,” *id.* 7:64–8:1.

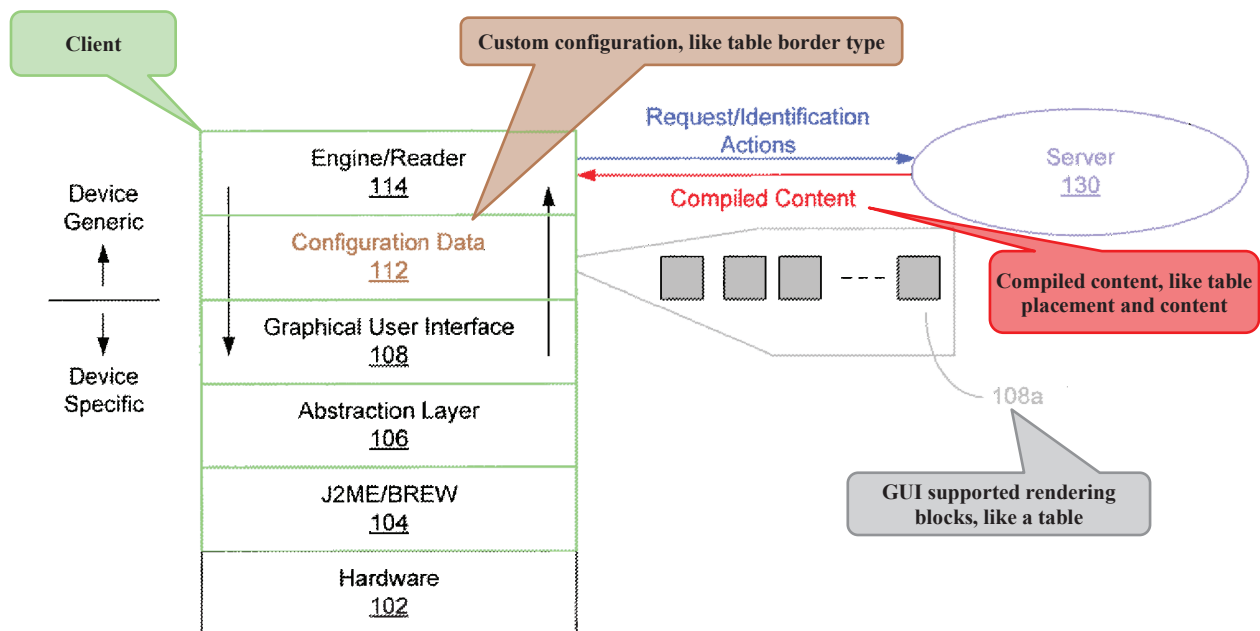
¶87. The custom configuration may be globally applicable to pages of an application. Stated otherwise, new application compiled content can be rendered using the GUI’s rendering blocks that were previously configured without the

application sending new, or resending the previous, custom configuration data.

See, e.g., id. 14:15–43 & Fig. 2B.

4. Client

¶88. The Patent-at-Issue refers to the software on the wireless devices that interacts with the application on the server, displays application content, and detects user interaction with the application as the “client.” *Id.* 6:16–21. The client generally comprises the “software stack” conceptualized as residing at a higher level than the wireless device hardware as shown in “Blocks 104 through 114” below. *Id.* 6:57–59.



Ex. 1001 Fig. 1B. It is the client that “draw[s] the screen according to the description as specified by the received discrete low level basic commands and in accordance with the identified custom configuration.” *Id.* 13:32–35. Specifically, the client can

configure rendering blocks with the configuration data, and then an engine/reader can process the compiled content to ultimately render the remotely running application's pages. *Id.* 7:26–31; 18:62–19:3.

IX. INTERPRETATION OF TERMS

A. District Court Constructions

¶89. The District Court has construed the following terms, Ex. 2006, p. 10:

Term	Construction
rendering command	A description for rendering a page component, such as the width or the height of the component.
discrete low level rendering command	Indefinite
custom configuration	A configuration that determines the look and feel of the application
rendering blocks	Blocks that perform discrete rendering operations

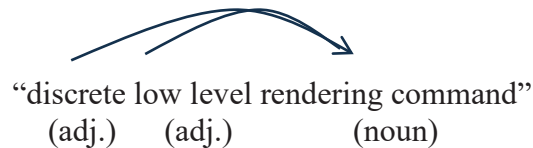
Except for “discrete low level rendering command,” I have used these definitions when addressing these terms in my analysis.

B. “Discrete Low Level Rendering Command” Means “Discrete Rendering Command That Is Tailored Based On Wireless Device Capability”

¶90. I disagree that the term “discrete low level rendering command” is indefinite. A POSITA would understand that a “discrete low level rendering command” means “discrete rendering command that is tailored based on wireless device capability,” and this definition provides reasonable certainty about the scope of the claim.

¶91. I note the Court only found that the “discrete” and “low level” words of this claim are indefinite, providing a construction for the remainder of the term, “rendering command.”

¶92. I start my analysis by noting that “discrete” and “low level” is modifying the “rendering command.” “Discrete” and “low level” are adjectives, parts of speech that modify a noun or pronoun and tell “what kind,” “how many,” or “which” about nouns or pronouns. “Render command” is a noun (a person, place, or thing). Therefore, a plain reading of the phrase is that “discrete” and “low level” modify is the following noun, “render command,” and, here, tells “what kind” of render command.



To modify “low level,” “discrete” would have to be an adverb, a part of speech that modifies another adverb, a verb, or an adjective and, may change intensity and usually end in “y” or “ly.” For example, in the fictitious terms “*very* low level rendering command” or “*really* low level rendering command,” “very” and “really” modify “low level” rather than “rendering command” as they are adverbs. By contrast, discrete is clearly an adjective and not modifying “low level.”

¶93. Next, I note that the patentee explicitly defines and explains the full phrase “discrete low level rendering command,” as shown below, and if the entire

identified phrase as used exactly as it appears in the claim is understood then the scope of the term is understood and not indefinite.

It is appreciated that basic commands are written in a syntax that is device generic regardless of the device type but whose parameters are tailored based on the wireless device capabilities. As such, precompiled basic commands ***are discrete low level rendering commands*** tailored based on the rendering capability of the client 210.

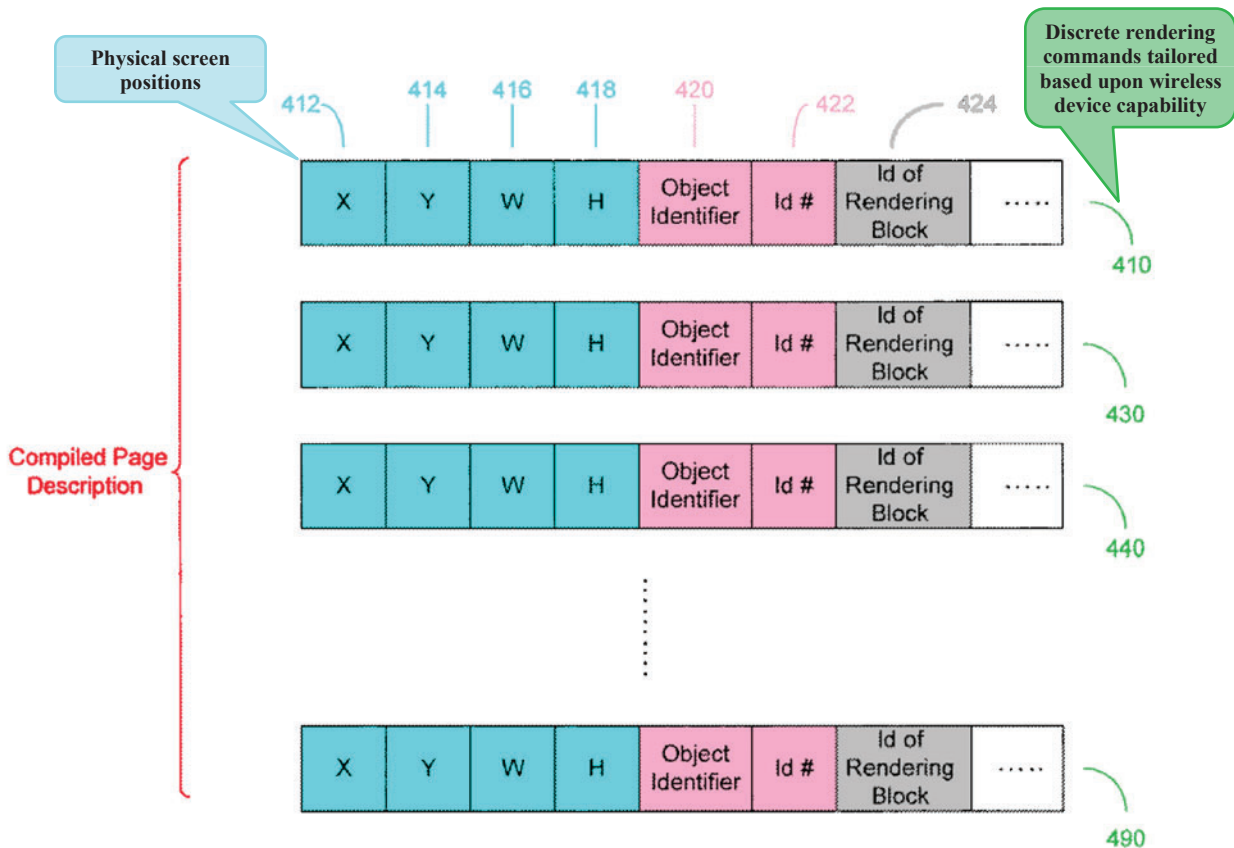
‘865 Patent 13:19–25. Indeed, the patentee also addressed the term “low level” as so:

Basic commands are written in a device independent syntax but *tailored based on the wireless device capability. Accordingly, the basic commands are [a] low level* compilation operable to render objects using the plurality of rendering blocks of the wireless device.

Id. 3:59–63. Taken together, “discrete low level rendering command” means “discrete rendering command that is tailored based on wireless device capability.”

¶94. Further, the specification provides examples of “discrete low level rendering commands” that confirm that this definition. Specifically, the ‘865 Patent teaches that “[l]ow level rendering commands include physical screen positions of

display elements.” Ex. 1001, Abstract. And the ’865 Patent points to the commands in Figure 4 as examples of these commands, including the same physical screen positions:



Id. 18:13–15. As seen, the examples of low level discrete “basic commands” include parameters for “absolute coordinates and size” of a component.

Id. 15:56–16:13. From these teachings a POSITA would understand that the commands are “low level” in that they are passing “device specific” or—using more words—“tailored based on the wireless device capability”—information to the *device specific* rendering blocks, such as absolute coordinates on a device’s screen where to place the block.

¶95. The specification also teaches that each command is “discrete” in that “[e]ach basic command may describe a given component on the page of the requested application to be rendered and *includes a rendering block to be used*. For example, a basic command 410 may be a description for rendering an image whereas a basic command 430 may be the description for rendering a video clip.” *Id.* 15:59–64. That is, the commands map to particular rendering blocks that perform “discrete” operation on the screen. *Id.* 7:21–23 (“A graphical user interface layer 108 includes a number of individual rendering blocks 108a that perform *discrete* rendering operations to render a received page description.”). Similarly, Petitioner’s expert explained, when asked “What makes the center command discrete?” that “Well, first of all, it is one command. It’s one specific thing. So I think that was an example of why there’s one discrete command and not, for example, one combination of multiple commands.” Ex. 2014, 114:19–115:2.

¶96. These examples echo the specification’s teachings, and bolster my opinion that a POSITA would understand that discrete low level rendering commands are individually tailored commands based on the wireless device capability, because they are for rendering blocks that perform discrete operations and include low level information such as the absolute screen coordinates and sizes instead of just relative locations and sizes.

¶97. In the context of the Patent-at-Issue, then, “low level” does not refer to the language (i.e., syntax) of the commands; rather, it refers to the command’s substance. That is, “low level” is not describing the concept of “high level” and “low level” programming languages, a meaning unmoored from the Patents-at-Issue. For example, C++ would be considered a “high level” language in that a compiler is needed to translate the programming to a device-specific instructions, while Assembly would generally be considered a “low level” language, in that the commands are already written in the native language of a device. However, this high-low software concept is *not* what the patent is referring to when discussing “low level” with respect to rendering commands. Indeed, claim 1 explicitly specifies that the *syntax* of the “discrete low level rendering command” is “wireless device generic,” which would make little sense if “low level” referred to being syntactically closer to a processors’ native instruction set, and instructs that “low level” is not referring to syntax.

¶98. Similarly, dependent claims, like claims 5–6, further limit discrete low level rendering commands, and, by doing so, give more information to allow a POSITA to recognize what is being described by the ’865 Patent. For instance claim 5 discusses “physical screen position of a display element,” so this tells a POSITA that a low level rendering command is again “device specific” information as physical screen characteristics are vary by device. Similarly, Claim 6 requires the

low level rendering command to reference a “location and a size of a screen area” and “rendering block[] of said graphical user interface,” and, again, screen size and rendering blocks are device specific. Thus, this too leads a POSITA to understand that this is what “low level” is referring to. *See also* Ex. 2014, 116:6–11 (“I did look at claim 6, which gives an example of a low-level rendering command. And so that provides me with at least an example, and so I showed that the prior art teaches information that is equivalent to this example of a low-level rendering command.”); 117:8–12 (“Claim 6 of the ’865 patent says that at least one discrete low-level rendering command includes a specification of a location and a size of a screen area. It goes on, but -- so that's an example of a low-level rendering command.”).

¶99. While of less importance than intrinsic evidence, I additionally note that dictionary definitions of “discrete” are consistent with my understanding of the plain and ordinary meaning of the term, the specification’s teachings, and the Patents-at-Issue’s examples. Merriam-Webster defines “discrete” as “constituting a separate entity: individually distinct” or “consisting of distinct or unconnected elements.” Ex. 2008, at 1. The American Heritage Dictionary of the English Language defines “discrete” as “[c]onstituting a separate thing” or “[c]onsisting of unconnected distinct parts.” Ex. 2009, at 2. This definition has not changed from the time of the effective priority date. *See* Ex. 2010. This comports with the individual low level

rendering commands shown in Figure 4 that show separate and individually distinct operations on individual rendering block, each distinctly numbered commands.

¶100. Finally, the fact that Petitioner here had no trouble identifying what a “discrete low level rendering command” is in the prior art undermines any argument the term is indefinite. Pet. 35 n.8, 46, 47, 71, 72–73.

C. “Said Custom Configuration Being Specific to Said Application Program” Means the Custom Configuration Is “Created For” or “Tailored To” the Application Program

¶101. The patentee has not explicitly defined “specific to”; however, the Patent-at-Issue gives an example where “specific” is contrasted with “generic” at least with respect to application template. In particular, the ’865 Patent says a remote server executing a generic application “is generic in that it is not *specific to* any device or any set of device capabilities.” Ex. 1001, 6:10–13. From this teaching, a POSITA would understand that “specific to” concerns a particular device and its capabilities.

¶102. Further, a POSITA reading claim 12—in particular limitation 12[e], that says “eliminate, using said device profile, at least one content item from said plurality of content items from said wireless device generic template to define a device specific template associated with the wireless device, said at least one content item being unsupported by the wireless device;”—sees that considering the content a device supports and modifying a generic template in view of this consideration

“defines” a “device *specific* template.” That is, the claim itself provides a definition for the “specific” template: one that considers a “device profile” the specification teaches “includes information about the specific wireless device capabilities.” *Id.* 3:29–30. Therefore, in line with the specification, the claims too show that “specific to” refers to creating with a particular device in mind, for example, creating while considering a particular device’s capabilities.

¶103. While the specification example and claim 12 are referring to the “template,” it is my understanding that claim terms are normally used consistently throughout the patent. I find no reason that the term is used in a different manner when discussing a custom configuration being “specific to” an application. So, I believe that “specific to” when used with a custom configuration *specific to* an application should also be understood as designed while considering a particular device or device’s capabilities, or—more succinctly—“made for.”

¶104. Looking specifically at the custom configuration and what the ’865 Patent teaches about what makes one “specific to” an application, I see that the specification teaches the “server will eventually translate the output of the [generic] application to a device *specific* set of commands,” *id.* 6:13–14, and “the server *tailors* the output of a generic application based on the wireless device capability,” *id.* 5:57–58. Because the specification discusses the same item, once referring to the item being “tailor[ed to]” and once being “specific to,” I glean that

the patentee uses “specific to” and “tailored to” interchangeably. And the fact “tailored” generally means “made or changed especially to be suitable for a particular situation or purpose,” Ex. 2007, is consistent with the other ’865 Patent teachings that “specific to” means “customized for” a particular device, for instance, by considering the device’s capabilities.

¶105. Further, the specification gives several examples of potential customization and applications. The Patent-at-Issue contemplates customization may “customize a ‘submit’ icon to look like an airplane flying away,” Ex. 1001, 7:59–65, and set a “scroll bar . . . [to] an image of a shamrock leaf during St. Patrick’s day,” *id.* 10:56–62. The Patent teaches that one application may be Texas Hold’em Poker application. *Id.* 16:39–42. A POSITA would understand that these customizations were purpose driving considering the application. The plane flying away might be for aviation application. And the shamrock might be fore a calendar application. That is, when the application writer creates the custom configuration the author has some application in mind. A custom configuration for the Texas Hold’em application could configure items to show suits of cards (hearts, diamonds, clubs, and spades). This type of configuration that makes sense for a card game, would make no sense for a travel application. So, from these further examples a POSITA knows that “specific to an application” is created with an application in mind.

¶106. Turning to the meaning of “specific to” as understood in the relevant field concerning distributed applications, a POSITA would recognize that something specific to an application is “application-specific.” POSITAs understand that “application-specific” when discussing software means “created or written for a specific application.” Ex. 2011. Therefore, the common understanding of “specific to said application,” triangulates with the specification and claims to again point a POSITA to understand “specific to” to mean “created for,” “written for,” “tailored to,” etc.

¶107. In conclusion, there are many ways of saying the same thing, but here a “specific to” means “tailored to,” “designed for,” “created for,” “with a particular item in mind,” etc. Therefore, POSITA understands the larger phrase “said custom configuration being specific to said application program” as used in the ’865 Patent to mean “said custom configuration being *created for or tailored to* said application program.”

D. “Eliminate” Means “Remove”

¶108. “Eliminate” is used in the claims as follows: “*eliminate*, using said device profile, at least one content item from said plurality of content items from said wireless device generic template.” See limitation 12[e]. In the claim context, “eliminate” appears to be used in the colloquial manner, so a POSITA would understand the term to mean “remove.”

¶109. The specification confirms this understanding. Specifically, the specification says that:

Additionally, the template engine communicates with a device profile of the wireless device and may *eliminate* content of the requested application that is not supported by the wireless device based on the capabilities of the wireless device. For example, if the server determines that the wireless device has no audio capability, the content related to audio may be *eliminated* from the template.

Ex. 1001, 3:44–50. In this example, it can be seen that non-supported items are “eliminated” or “removed” from the template because there is no reason to keep and send unsupported content.

¶110. Indeed, the specification also teaches that it important that (1) the application is “tailored in accordance with the wireless device attributes,” *id.* 1:41–42; and, (2) the invention is keen to “avoid wasting bandwidth,” *id.* 13:53–57, 12:44–49. The elimination or removal of unsupported content furthers both of the ’865 Patent’s goals, because the system does not use bandwidth sending something that to a wireless device that the end user cannot experience. Be able to experience on this device. So, the specification is in accord with the claims that “eliminate” means “remove.”

¶111. “Eliminate” is not used in the industry in some special way, but means the same as the word does in everyday conversation as meaning “to get rid of; remove.” Ex. 2012. I have analyzed the ’865 Patent and found no indication that “eliminate” is not used in the normal everyday usage.

¶112. Finally, Petitioner and its expert also view “eliminate” as meaning “remove.” See Pet. 62 (arguing limitation in 12[e] is met because “content on WAX stylesheets can be *removed*”); Ex. 1002 ¶224 (same). I agree with their implied view of “eliminate,” though I disagree that the identified content was eliminated.

¶113. Given the claims, specification, and the ordinary meaning to a POSITA, and Petitioner and Patent Owner and their experts concur, “eliminate,” should be defined as “remove.”

X. OVERVIEW OF THE CITED REFERENCES

A. Hariki

¶114. Hariki concerns “a mobile device UI configuration system that allows a UI skin package content provider to easily generate a new UI resource file for new or different mobile devices, and make these UI skin packages available for download and installation on user mobile devices.” Ex. 1005 [0008]. With these “UI skins,” Hariki “provide[s] user interface (UI) customization capabilities that allow users to personalize their phones or mobile devices with custom ringtones, background

displays (wallpaper), menu configurations, and the like,” *id.* [0005], to replace the “default user interface for each model of device,” *id.* [0007].

¶115. Specifically, Hariki contemplates a “user interface authoring tool” that “maintains a common database of resources for each mobile device model” “defined by device manufacturers.” *Id.* [0019]. The “resources comprise files, links to files, and/or data or program objects associated with the configurable aspect of the user interface for each mobile device.” *Id.* [0019]. “Thus, as shown in FIG. 2, a resource profile is provided for device A, and a resource profile is provided for device B. With reference to FIG. 1, these can correspond to resource profiles for mobile devices 108 and 109, respectively.” *Id.* [0031].

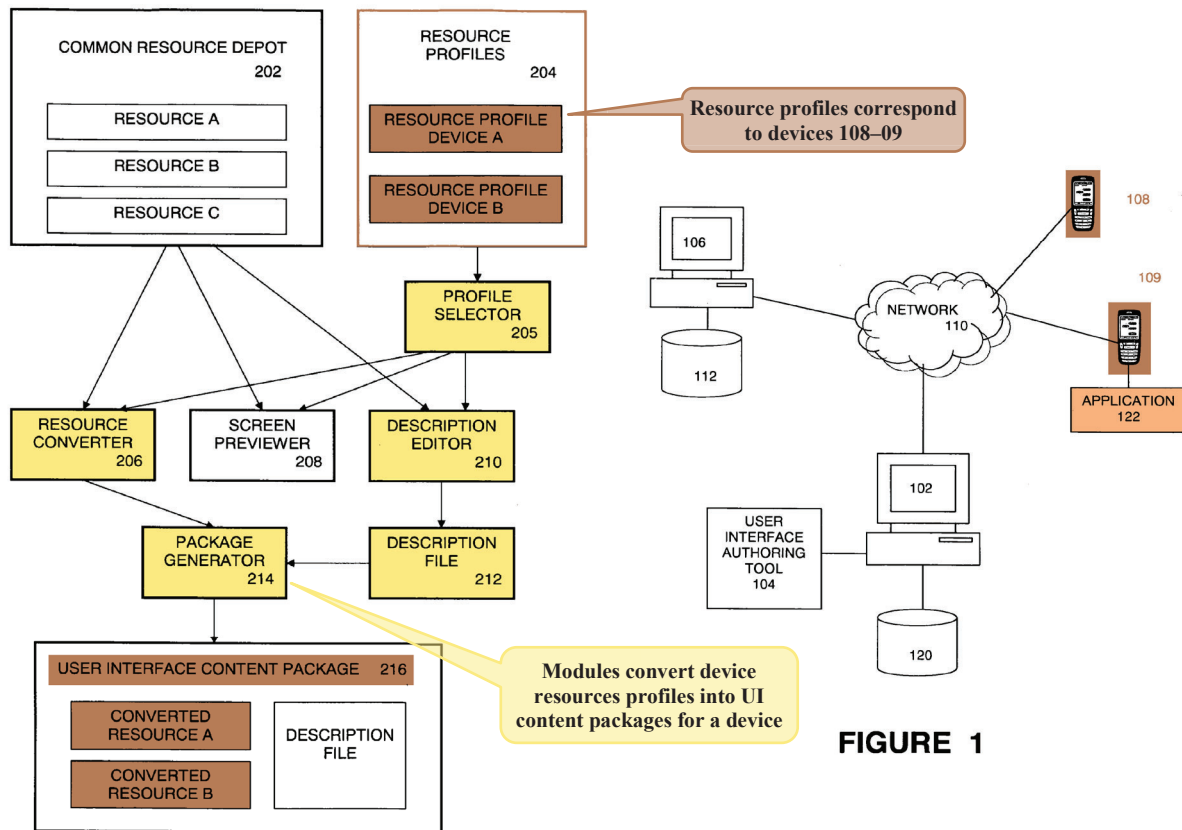


FIGURE 1

FIGURE 2

Ex. 1005 Figs. 1–2.

¶116. Hariki explains that various “modules” (205–12) use the resource profiles for the devices to create a UI content package 216 for a device. *Id.* [0032–33]. Specifically, “[t]he profile selector 205 selects a resource profile 204 depending upon the device model selected by the content provider. The corresponding resource 202 for that model is then converted by resource converter 206.” *Id.* [0032]. “A description editor component 210 produces description files 212 . . . [and t]he description file 212 and the converted resource output from resource converter 206

are processed by a package generator component 214 . . . [that] takes the resource and description and creates a UI content package 216.” *Id.* [0033].

¶117. Once created, “[t]he actual UI content package to be downloaded is generally selected by the user of the mobile device.” *Id.* [0044]. And “the user can change the UI content by changing the [device’s settings through the] setting application 504.” *Id.* With the skin in place, “one or more application programs 122 or software modules . . . access the resources provided by the UI content package.” *Id.* [0040]. That is, any application or program “can playback or perceive the image, video, sound files, etc. of the resources provided by the UI content package.” *Id.* In this way, “UI skins allow a user to customize the ‘look and feel’ or application program environment of a device by altering display and/or sound output aspects of the device, such as backgrounds, title bars, buttons, alert sounds, and so on.” *Id.* [0024].

B. Harris

¶118. Harris concerns “delivery of the same content to multiple mobile devices using different device protocols.” Ex. 1006 [0002]. To do this, Harris envisions a mobile content framework (“MCF”) that uses “a generic markup language, referred to as Wireless Abstract XML (hereafter WAX).” *Id.* [0007]. A designer may author pages “created in WAX originally,” or “content [may be] first translated in to WAX from the original language of the content provider.” *Id.* The

content may be stored at any “content location” interfaced with the WAX server. *Id.* [0008].

¶119. Whatever the source and wherever the content resides, the MCF may translate the “WAX language . . . to a requesting device’s native language . . . [or] from WAX to languages like WML, HDML and HTML.” *Id.* [0018]. For example, WAX element “<wax:button>” may be sent “as a ‘soft-key’ for WAP devices, but as a ‘link’ for devices which understand only HTML.” *Id.* [0030].

¶120. However, Harris also notes that “even when two devices employ the same language, there is no guarantee that they each interpret and render content the same way. For example, the way WML is rendered on Nokia devices is very different from the way it is rendered on devices from other manufacturers.” *Id.* [0003]. Therefore, “not only [does Harris] translate[] [WAX] into a specific language appropriate for the device, but . . . [the translation] is tailored based upon the attributes of the requesting device.” *Id.* [0018]. That is, the MCF may handle “the idiosyncrasies of each device,” such as considering the fact that Nokia’s WAP browser “does not display lists in the same fashion as the [WAP] browsers on phones from other manufacturers.” *Id.* [0017]. The MCF may even “address special characteristics of . . . devices (special character encodings, scripting languages, etc.),” *id.* [0028], by running the translated WAX files, for example intermediate

HTML files, through “another level of processing in order to accommodate device requirements such as character encoding,” *id.* [0034].

¶121. Harris also teaches that, in one embodiment, an automated testing environment can make sure the content will be displayed correctly before the translated device-specific files are deployed to a device. *Id.* [0035].

¶122. Ultimately, only the device-specific “customized content is . . . returned to the requesting device.” *Id.* [0024] & Fig. 3.

C. Dees

¶123. Petitioner only relies on Dees as allegedly disclosing the limitations added by dependent claims 5–7 and 16–18. Pet. 66–77. Because it is my opinion that the independent claims upon which these dependent claims are not obvious in view of Harris and Hariki, and Petitioner does not invoke Dees for the independent claims, I do not provide an overview of the Dees reference.

XI. HARIKI IN VIEW OF HARRIS FAILS TO RENDER ANY CLAIM OBVIOUS

A. Hariki in View of Harris Fails to Disclose Limitation 1[c]/34[a] Requiring the Custom Configuration Be “Specific to” the Application Program

1[c]/34[a] [sending/The non-transitory processor-readable medium of claim 12, further comprising code representing instructions to cause the processor to: send] a custom configuration to the wireless device, said custom configuration being specific to said application program;
--

¶124. Petitioner identifies the Hariki’s “UI content package” or “UI skin” as the claimed “custom configuration,” Pet. 30, and the “web server” as “application program,” *id.* 29. As such, the limitation requires the UI skin be designed for the web server as I discussed in the claim construction section. See Section IX.C beginning on page 48. This is not the case.

¶125. The UI Skin is located on the wireless device. The web server is not executing on the mobile devices, but Hariki describes and shows the web server “executing” on server 102 that communicates with the wireless device “to serve web pages over network 110.” Ex. 1005 [0021] & Fig. 1 (item 120). And there is no teaching that the web server does uses, or could use, the UI skin. The UI skin certainly is not tailored to or written for (i.e., “specific to”) the web server.

¶126. The entire process of creating a UI skin from start to finish shows it concerns the wireless device, not a remote web server. Using the UI authoring tool, a developer first selects a “resource profile” from a set of “[r]esource profiles [that] are defined by device manufacturers *for each model of mobile device*. The resource

profiles specify the composition, format, and appearance of one or more user interface elements *displayed or executed by the mobile device.*” See Ex. 1005, [0019] & Fig. 4 (item 401). And once packaged, the “resource files [are] *for the different mobile devices.*” Ex. 1005 [0025]. Ultimately, it is the “application program[s] *executed on the mobile handset . . . [that] access[es] the resources.*” *Id.*[0019]. The UI skin does not take into account any web server during its construction and ultimately is not used or usable by a web server as it is written and created for applications running on mobile devices.

¶127. In an attempt to arrive at some relationship between the UI skin and the web server, the best Petitioner can say is that when a mobile device accesses a “server to receive HTML files, the *Hariki-Harris* system would have sent the customized UI.” Pet. 31 (citing Ex. 1002 ¶147). However, just because petitioner can enunciate some tenuous relationship between the UI skin and server, does not mean the UI server is “specific to” the web server.

¶128. In any case, I disagree that the *Hariki-Harris* system functions as Petitioner describes. First, it makes no sense that a mobile device requesting HTML files would receive a customized UI. A wireless device that requests HTML files expects to receive *HTML files*, and UI skin packages are not HTML files. HTML is a language primarily for describing documents with set defined tags. See, e.g., <https://html.spec.whatwg.org/multipage/introduction.html#introduction>. The one

exemplary UI content package Hariki provides shows a custom format with non-HTML field “item.” Ex. 1001. Hariki does not teach that a browser expecting HTML files would or could handle UI skin content packages.

¶129. In any case, even if Petitioner was correct, merely sending a custom configuration does not make the custom configuration “specific to” the sender. As I explained, the UI content package is based upon wireless device characteristics—i.e., created for a wireless device—without regard to the server that provides the UI skin to the wireless device.

¶130. Indeed, I note that Petitioner only relies upon Dr. Bederson, Pet. 31 (citing Ex. 1002 ¶147), does not explain why he believes “converted resources in the UI content package are generated and sent when the mobile device access [sic] the web server process.” Ex. 1002 ¶147. I see no such teaching in Hariki not that UI skins are generated when a mobile device accesses the web server. Rather, Hariki teaches that the content provider using a UI authoring tool that generates UI skins. Ex. 1005 [0019], [0024], [0028], [0032]. Hariki further teaches that custom configurations are either pre-installed or sent when they are selected by the users of the mobile devices from content servers like that shown in Fig. 5, the authoring tool, content servers co-resident with a web server. *Id.* [0025], [0044] & Fig. 5 (item 540). Again, there is no teaching that UI content packages are sent when the mobile device requests HTML from a web server.

¶131. Nonetheless, taking Petitioner’s position as true for argument’s sake, this generation and sending by a web server could not meet the claim limitation. The claim limitation requires the custom configuration must be “specific to” (i.e., made for, tailored to, etc.) the identified application, and there is no teaching that the UI skin is *written for* (i.e., “specific to”) the Petitioner-identified application, an HTML web server.

¶132. Petitioner also says that a POSITA would have “understood that, *when the web server process is accessed*, the converted resources in the UI content package configure the configurable aspects of the UI, by e.g., changing a display image or color.” Pet. 31 (citing Ex. 1002 ¶147). However, Petitioner provides no citation to any disclosure in Hariki that the resources in the UI skin changes a display image or color when any server is accessed. I find no such disclosure. In fact, for this functionality Petitioner only cites its expert, but Dr. Bederson does not say that this is true. Dr. Bederson only makes the uncontroversial statement that “converted resources in the UI content package configure the configurable aspects of the UI, by for example, changing a display image or color,” not that they do so “when the web server process is accessed.” Ex. 1002 ¶147. I agree that the UI skin may affect an application running on a mobile device, but I see no disclosure in Harris that such change occurs when an HTML server is accessed, and it is my opinion that a POSITA would not understand that this was the case.

¶133. Moreover, assuming a mobile device displays an image or color from the UI skin upon accessing a web server—and there’s no disclosure that this occurs—it is my opinion that this still would not make UI content package tailored to a particular web server. “Applying” a UI skin on a wireless device is not evidence that the UI skin was designed for the web server.

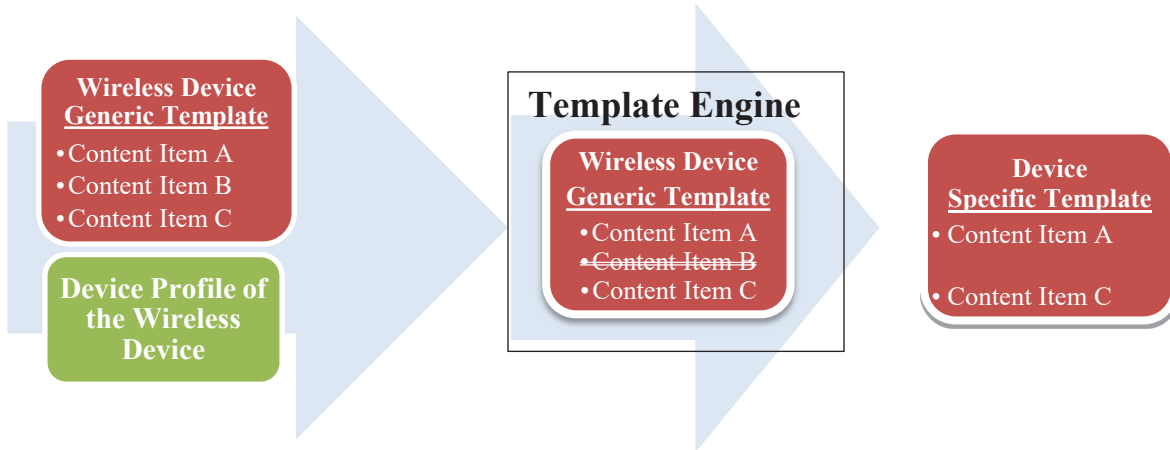
B. Hariki in View of Harris Fails to Disclose Limitation 12e

12[e] eliminate, using said device profile, at least one content item from said plurality of content items from said wireless device generic template to define a device specific template associated with the wireless device
--

¶134. This limitation requires eliminating at least one “content item” from the previously generated “said wireless device generic template,” *see* limitation 12[b], “using [the] device profile.” A device profile “includes information about the specific wireless device capabilities,” Ex. 1006, 17:28–31. “Eliminate” means “remove” (i.e., take out to avoid sending content to the wireless device that the wireless device cannot understand). *See* Section IX.D beginning on page 51. The limitation also requires that the one or more content items must be removed “using [the] device profile.” And the limitation itself says that the act of removing the content item(s) using the device profile “defines” a “device specific template.” *Id.*

¶135. This claim limitation process is illustrated as follows, where there is a wireless device generic template with content items and a device profile, which

specifies the device capabilities, and these two items are fed into the Template Engine:



In this example, when the Template Engine analyses the content items in view of the device support, the Template Engine removes Item B as not supported. It is eliminated. The modified template without Item B is now a device specific template.

¶136. Petitioner identified “WAX stylesheets” as the “wireless device generic template.” Pet. 28. It appears that Petitioner is identifying the “sample” WAX shown in Harris’ paragraph 29 shown below as an example “WAX Stylesheet.” Pet. 62.

```

<?xml version=" 1. 0" encoding="utf-8"?>
<wax:wax xmlns:wax="http://www.kargo.com/wax" version="O.9">
  <wax:doc version="1.0">
    <wax:title>NY Nightlife</wax:title>
    <wax:block id="splash">
      <!--EXAMPLE 1 -->
      <wax : button href="index?a=rmain"
      keytype="accept" type="go" labelid="enter" />
      <wax:p align="center">
        <!--EXAMPLE 2 -->
        <wax: img srcid="logo" alt="My Nightlife"
        border="O" />
        <wax:br/>
        <!--EXAMPLE 3 -->
        <wax: text id="welcome" />
        <!--EXAMPLE 4 -->
        <% if ((String)session.getAttribute("lang") ==
        null)
        out.println ("<wax:a
        href=\ "index?a=chlang\ ">Choose
        Language</wax:a>");
        %>
        <wax:br/>
        <wax:br/>
      </wax:p>
    </wax:block>
  </wax:doc>
</wax:wax>

```

Ex. 1006 [0030]. Petitioner argues that the above “WAX stylesheets. . . include content (i.e., ‘plurality of content items’)” that will be “tailored by the device stylesheets.” Pet. 28.

¶137. Finally, Petitioner argues that limitation 12[e] is met because when “translating WAX content to HTML” “welcome” may be translated to a different string “POSITAs would have thus understood that content on WAX stylesheets can be removed.” Pet. 62 (citing Ex. 1006 [0030]). The referred to WAX “welcome” code is shown here:

<pre> <!--EXAMPLE 3 --> <wax: text id="welcome" /> </pre>

¶138. However, this “welcome” content item is not eliminated removed.

“Welcome” is the label of an identification that references external content. It is no different than the other tags with “id” that clearly reference external content. Moreover, “id” is well known in coding such as HTML to reference an object by label, and the content of the label is not used itself for display.

¶139. The content items in the WAX are merely modified based upon what the MCF determines the welcome element should be for a particular device, but the modified content items remain present. For instance, Petitioner notes for Example 3, `<wax: text id=“welcome” />`, that Harris may alter this logical WAX tag to a device-specific WAX tag and then subsequently translate the WAX elements to HTML. *Id.* (citing Ex. 1006 [0030]). Specifically, Harris teaches that the MCF may alter the “welcome” element in Example 3 to “Bonjour” for French speakers or “Welcome to our site, please take a look around” for wireless devices with a larger display.” Ex. 1006 [0030]. And the Board noted, see Inst. Dec. 39, that Harris teaches a similar procedure for Example 2, showing the WAX image tag with source id “logo”:⁴

⁴ From Harris’ Provisional, see Ex. 1006 item (60), it can be seen that border=“O” should be border=“0,” *see* Ex. 2012 at 17, meaning a border of 0 pixels (i.e., do not use a border).

```

<!--EXAMPLE 2 -->
<wax:img srcid="logo" alt="My Nightlife"
border="0" />

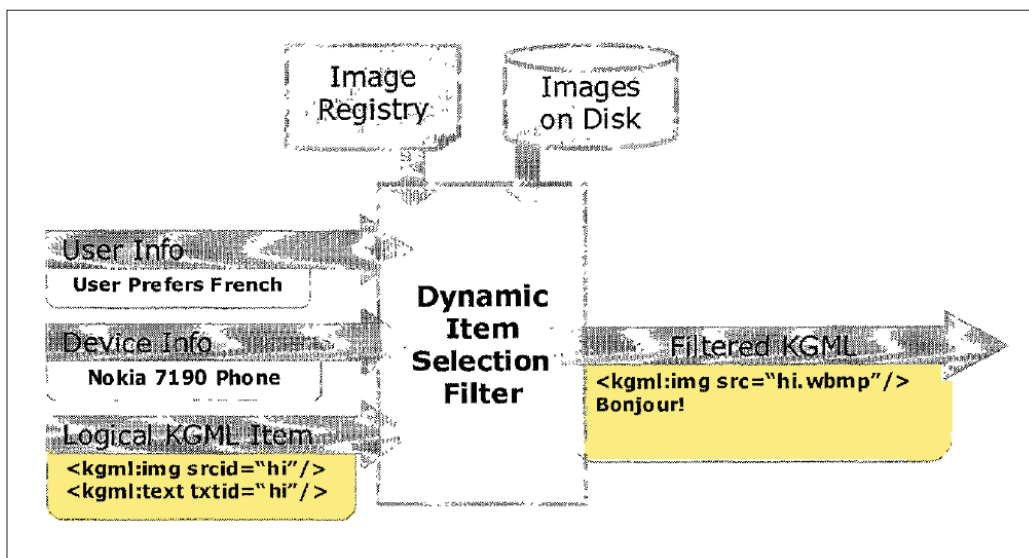
```

Specifically, Harris says:

In Example [2] the text “logo” is placed into the srcid attribute instead of the URL to the actual image. The text “logo” is used to index into a set of rules to determine the best image to display for the specific device. For example, the framework may determine that “logo.gif” is the best image for the given device or possibly that “logo-nok7100.wbmp” is the best image.

Ex. 1006 [0030].

¶140. But Figure 6 from Harris’ Provisional below gives an example of what such MCF processing would look like after “the stream of WAX enters into a set of filters that alter many of the ‘logical’ tags into ‘physical’ tags.” *See* Ex. 1006 [0034].

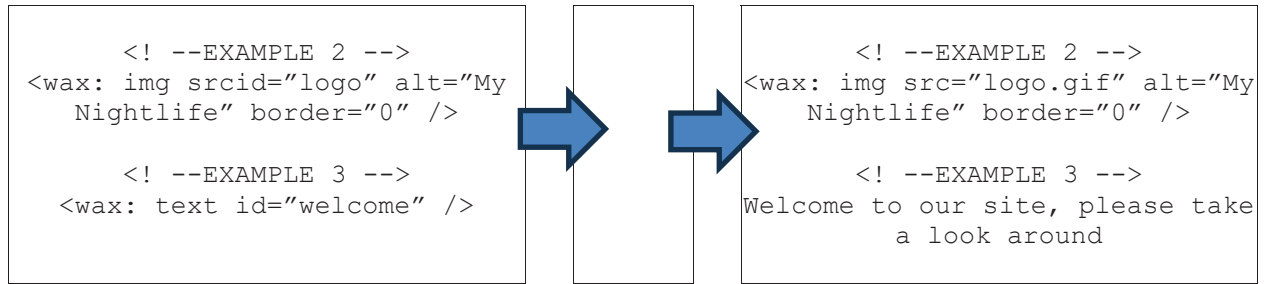


Ex. 2013, at 17 (highlighting added). Note that the image and text tags show

“kgml” rather than “wax” as “kgml” was what Harris initially called wax. Ex. 1006 [0007] (“WAX is referred to as KGML in related provisional.”). And the “hi” text content is similar to the “welcome” text content shown in the Harris. As can be seen, just like one example in the Harris patent the text tax has now been translated to “Bonjour!” Similarly, like “logo.gif” could be filtered to “logo-nok7100.wbmp,” *Id.* [0030], the image tag in the provisional is filtered to use “hi.wbmp.” Note, that text and image elements are still present after filtering. Indeed, there is a one-to-one correspondence where each can be identified. Also note that a POSITA understands that the MCF generates “Bonjour!” because the MCF has analyzed the HTML headers and determined the preference for French and the device supports this text encoding. Similarly, a POSITA understands that the MCF generates the physical wax tax with “src” equal to “hi.wbmp” because the MCF has analyzed the device and determined that it supports wireless application protocol bitmap formatted (“wbmp”) files.

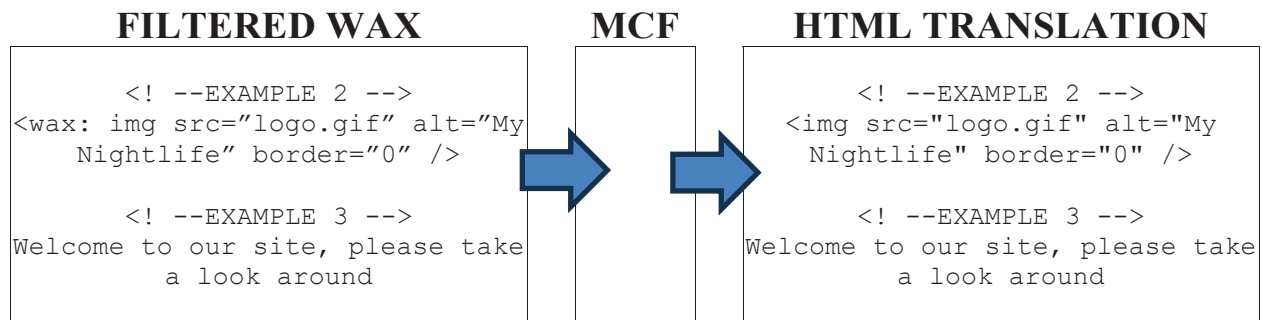
¶141. Using the provisional as a roadmap, Example 2 and Example 3 from Harris would similarly look as so before and after being filtered:

	MCF	FILTERED WAX
--	------------	---------------------



After filtering, the WAX is sent to the device as it still requires further processing, but, note that no content item has been eliminated.

¶142. Then the filtered WAX is translated to HTML before “[t]he customized content is then returned to [the] requesting device.” Ex. 1006 [0024]. While the Harris provisional did not show the resulting HTML, a POSITA with even a rudimentary knowledge of HTML would understand that the HTML would look as follows:



As seen, after translating, the result is proper HTML with an “img” tag and text content corresponding to the original text content specified with “id” equal to “welcome.”

¶143. First, the HTML cannot be the “generic template” or the “device specific template,” because Petitioner identifies the HTML as the generated “page description” from the template for limitations 12[g]–[h], see Pet. 63.

¶144. Second, neither the filtered WAX nor the HTML meet the claim limitation, because the identified “content items” are not “eliminated” from the WAX Stylesheet. The content items in the WAX are modified, but the modified versions of the content items are present. For instance, the WAX “logo content item” becomes the WAX filtered “logo content item” that then becomes the HTML “logo

content item.” The “logo content item” is not removed. Similarly, the WAX “welcome content item” becomes the WAX filtered “welcome content item” that then becomes the HTML “welcome content item.” The “welcome content item” is not removed. Every content item that was present at the beginning is present in the HTML that was sent to the device.

¶145. Harris teaches that, like the text, the image will “display[] correctly on each device,” Ex. 1006 [0022]. I agree. So, the identified “content items” are not removed but are sent to, and rendered on, the wireless device.

¶146. Petitioner alternatively argues that by translating “welcome” to French, the MCF has “eliminated” a different modification that might have occurred (for example translating the “welcome” tag to a German physical tag).⁵ *See* Pet. 62 (“POSITAs would have thus understood that content on WAX stylesheets can be . . . not converted to a language.”). Similarly, Petitioner argues that when the MCF filters the WAX to change the logical “welcome” tag to “Bonjour” the MCF has “reduced in length to eliminate portions of the content,” because the MCF did not

⁵ The MCF may discern the user’s language from the HTTP header meta information, *see, e.g.*, <https://www.w3.org/International/questions/qa-http-and-lang>, much like Harris teaches “[t]he headers of the HTTP request are examined by the MCF 8 in order to determine the type of device,” Ex. 1006 [0024]. *See also* Fig. 3 (item 62) (“Header of Request Examined to identify Device”).

produced the longer output meant for devices with larger screens, “Welcome to our site, please take a look around.” *Id.*

¶147. This is not correct. Altering a content item one way rather than another is not “elimination” of the *generated* content item as claimed. Elimination means “removal” of something that exists; it does not mean *not* creating something. The filtered WAX or HTML that was *not* produced was never “*generated*” per limitation 12[b], so cannot, for limitation 12[e], be “eliminated.”

¶148. Finally, Petitioner implies that limitation 12[e] is met because WAX tags can be “added or removed from the WAX *language*.” *Id.* 61 (citing Ex. 1006 [0028]). But Harris is discussing changing the supported “tag” definitions within the WAX language as a whole. That is, Harris teaches that tags shown in the WAX sample above, such as “<wax:title>,” “<wax:block>,” “<wax:button>,” “<wax:img>,” and “<wax:text>” could be added or removed.

¶149. This definitional change of the WAX language does not meet the limitation. First, this limitation requires elimination from the specific generic template generated in limitation 12[b], and Harris only discusses that the WAX tags may generally change, without instructing that a particular content item used in a Petitioner-identified generated template be eliminated. Ex. 1006 [0028]. Harris does not explain what effect removing a tag “from the WAX language” would have on existing WAX stylesheets previously referencing the removed tag, if at all.

Id. [0028]. Harris only gives examples of adding tags to prospectively support “new types of devices.” *Id.*

¶150. Additionally, the limitation requires elimination, “using said device profile . . . to define a device specific template associated with the wireless device.” Harris’s removal of tags from the language is not “using” a Petitioner-identified “device profile”—i.e., Harris’ “XML registry of devices.” Pet. 61. And removal of a tag “from the WAX language” would not convert a particular WAX Stylesheet into a “device specific template associated with the wireless device,” because such a global change to the WAX language is again not based upon any one device profile.

C. Hariki in View of Harris Fails to Disclose Limitation 12f

12[f] said at least one content item being unsupported by the wireless device

¶151. Hariki-Harris also does not meet limitation 12[f] Limitation 12[f] requiring that the content items that are eliminated using the device profile be “unsupported by the wireless device.” As just explained, Harris only adds/modifies content that *is* supported by the wireless device. Harris discloses that “content is generated specifically for each device,” and “MCF ensures the best type and length of text is used, the best type and size of image is used, and that *the content is well suited and customized for the device attributes.*” Ex. 1006 [0007]. In fact, Harris teaches “choos[ing] *appropriate content* for the requesting device.” *Id.* This is the opposite of removing inappropriate content.

¶152. Nonetheless, Petitioner argues that “Harris discloses removing, not converting, or reducing in length content items in WAX stylesheets based on a specific mobile device’s capability such as small display size stored in registry of devices,” giving a sole example of allegedly removing an “unsupported” content item, saying “POSITAs would have understood that content on WAX stylesheets can be removed (i.e., eliminate all other terms except ‘welcome’), when a small screen size is not capable of displaying the entire text (i.e., ‘please take a look around’).” Pet. 63 (citing Ex. 1002, ¶226).

¶153. While Petitioner identifies “welcome” as being translated, as I described above “welcome” is a tag id that references external content. “Welcome” is not itself content that would be displayed. Nonetheless, just like the “welcome” tag could point to “Bonjour” for French, it could also point to the corresponding content string “Welcome” for English speakers.

¶154. First, as explained for limitation 12[e], Harris does not remove any identified “content item,” and does not eliminate the “please take a look around” text or shortening this text to “welcome.” Harris discloses that the MCF could *modify* the element with the logical “welcome” tag to become a physical tag with the “please take a look around” phrase for devices with larger screens, or that the MCF could *modify* the element with the logical “welcome” tag to become a physical tag with “Bonjour” for French users. Ex. 1006 [0030]. But Harris the “welcome” content

element is preserved in a manner customized for what is best for the wireless device.

Id. This content is not “eliminated.”

¶155. Indeed, Harris always contemplates the generation of supported items. Harris teaches that when a wireless device contacts the MCF, “[t]he content dispatcher 18 queries web technology tools . . . to generate a form of WAX *most suitable for the requesting device.*” Ex. 1006 [0020]. Harris teaches that the MCF also chooses “a *suitable* XSL stylesheet to use for later device-specific translation.” *Id.* [0024]. Harris explains that “the WAX stream is examined in order to substitute the *most appropriate image with regards to the device.*” *Id.* Harris shows an example where “[t]he text ‘logo’ is used to index into a set of rules to determine the *best image to display for the specific device.*” *Id.* [0030]. Harris says that there is another example that “illustrates the same principal” (picking the best content for the device) “but with text.” *Id.*; *see also id.* [0007] (“[T]he MCF ensures the *best type and length of text* is used.”). Harris teaches that the WAX “stream can then be filtered through another level of processing in order to *accommodate device requirements* such as character encoding.” *Id.* [0034]. Harris concludes that “[t]he customized content is then returned to requesting device[s],” *id.* [0024], where it will be “*displayed correctly* on each device,” *id.* [0022]. Therefore, the petitioner-identified “generic template,” the WAX Stylesheet, and processing of the Petitioner-

identified “content items” inside the WAX Stylesheet, the WAX elements, are generated specifically because they *are* supported on the target device.

XII. HARIKI IN VIEW OF HARRIS FAILS TO RENDER DEPENDENT CLAIMS OBVIOUS FOR ADDITIONAL REASONS

A. Hariki in View of Harris Fails to Disclose a Generic Template with Relative Screen Location and Display Object Size Information Independent of Screen Dimensions of the Wireless Device

[2/13]. [The method of claim 1/The non-transitory processor-readable medium of claim 12], wherein said wireless device generic template [contains/includes] relative screen location and display object size information [and is] independent of screen dimensions of the wireless device.

¶156. Petitioner fails to show the WAX Stylesheet (Petitioner identified “wireless device generic template”) contains/includes relative screen location and display object size information and is independent of screen dimensions of the wireless device.

¶157. First, Petitioner’s reliance upon Harris’ teachings that content will be chosen that is “well suited and customized for the device attributes” when the “WAX language [is] dynamically translated,” Pet. 43, is the *opposite* of providing location and object size “*independent* of screen dimensions of the wireless device” as the claim requires. Harris’ teaching is that that the content is “customized for the device attributes.” The very example that Petitioner uses regarding the “date chooser” is a function of “screen dimensions,” the reverse of “independent of screen dimensions.” Ex. 1006 [0018] (“For example, a WAX ‘Date-Chooser’ renders one way *on the*

limited screen sizes of mobile phones.”); see also id. [0004] (“Moreover, resolution and legibility vary differently *from display size*.”); *see also id.* [0021] (“Once the type of device is identified, attributes such as *screen size* . . . and translation rules become known.”), *id.* [0024] (same). Therefore, Petitioner’s reliance upon “translation rules” fails to meet the claim limitation because the rules are screen-size *dependent*.

¶158. Additionally, for claim 13, Petitioner identifies the “wireless device generic template” as the WAX stylesheet *prior to translation* and the filtered WAX stylesheet as the separately recited “device specific template.” So, Petitioner may not for claim 13 point to *post* translation (filtered and translated) WAX for these claims. Therefore, Petitioner’s argument for claim 13 is additionally deficient as not identifying the same “wireless device generic template.”

¶159. Second, Petitioner says this limitation is met because Harris discloses the WAX paragraph tag element in the pre-filtered and pre-translated WAX Stylesheet shown below specifying “center,” because center “is a physical location relative to the edges of the containing window.” Pet. 43–44.

<pre><!--EXAMPLE 1 --> . . . <wax:p align="center"></pre>

¶160. However, the limitation not only requires “relative screen location,” but the claim also requires including “display object size information.” There is no

teaching of “display object size information” in the pre-translated WAX Stylesheet, so reliance upon “center” alone does not meet the claim limitation.

B. Hariki in View of Harris Fails to Disclose a Page Description Includes an Audio Rendering Command

[8/19]. [The method of claim 1/The non-transitory processor-readable medium of claim 12], wherein said page description includes at least one display rendering command and at least one audio rendering command.

¶161. Petitioner additionally fails to show limitations in claims 8 and 19 are met, because Petitioner only identifies an audio related configuration in the UI skin that petitioner previously identified as the “*custom configuration*,” Pet. 30, not the HTML files petitioner previously identified as the “page description,” *id.* 50, recited in this claim.

¶162. Specifically, Petitioner says that the “UI content package” may alter “sound output aspects of the device,” *id.* 50. However, the UI content package is not the HTML files. And Petitioner does not argue the HTML files have such an audio rendering command, simply saying “POSITAs would have understood that to render audio content, an audio rendering command is required,” not that there is such a command in the HTML files, or that such a command would be directed towards the UI content package. *Id.* 51.

XIII. HARIKI IN VIEW OF HARRIS IN FURTHER VIEW OF DEES FAILS TO RENDER ANY CLAIM OBVIOUS

¶163. The Petitioner only relies upon Dees for the added limitations of dependent claims 5–7 and 16–18. Pet. 66–77. Petitioner wholly relies upon Hariki and Harris for claim 1, from which claims 5–7 ultimately depend, and 12, from which claims 16–18 ultimately depend. *Id.* I have already discussed why Hariki and Harris do not render claims 1 and 12 unpatentable. Therefore, Petitioner has not shown that Dees discloses that which Hariki and Harris lack, and Petitioner has failed to show claims 5–7 and 16–18 are unpatentable for at least the same reasons.

XIV. CONCLUSION

¶164. It is my expert opinion that all Challenged Claims of the '865 Patent are not rendered obvious over Hariki in view of Harris and in further view of Dees as Petitioner asserts.

XV. DECLARATION

¶165. 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 on the subject matter of this declaration. If cross examination is required of me, I will appear for cross examination within the United States during the time allotted for cross examination.

¶166. I 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. Further, these statements are made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on Jan 26, 2024, at Las Vegas, NV USA.



Stuart Lipoff

APPENDIX A (EXPERT RESUME)

Stuart J. Lipoff

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Las Vegas, NV 89109
Tel +1.617.244.3877/Fax +1.617.249.0369

My practice focus deals with topics in Communications, Information, Technology, Electronics, E-Business, and Media.

I provide clients with management consulting and technology-based consulting across a wide variety of industries drawing on the base of communications industry and technology expertise. Areas of focus include--public and private network voice and data communications, cable television, cellular mobile radio, broadcasting, security systems, image processing, broadband access technology, internet applications, and consumer electronics.

EDUCATION AND CERTIFICATION:

BS Electrical Engineering- Lehigh University, 1968
BS Engineering Physics- Lehigh University, 1969
MS Electrical Engineering- Northeastern University, 1974
MBA, Suffolk University, 1983
Registered professional engineer- State of Nevada and Commonwealth of Massachusetts
Certificate in Data Processing- Institute for Certification of Computing Professionals (ICCP)
FCC general radio telephone license

PROFESSIONAL ACTIVITIES:

- Fellow of the Institute of Electrical and Electronic Engineers (IEEE)
- Member of IEEE Consumer Electronics Society Board of Governors and past president of The Society
- VP of Publications for IEEE Consumer Electronics Society
- Senior Editor IEEE Consumer Electronics Magazine
- Past Chairman Boston Section of IEEE Vehicular Technology Society
- Past Chairman Boston IEEE Boston Fall 2000 Vehicular Technology Society Conference
- Member of program committee and past conference chairman of IEEE International Conference on Consumer Electronics
- Past Chairman of IEEE Consumer Electronics Standards Committee
- Past Awards chairman of IEEE Ibuka Award for Consumer Electronics
- Elected Member, Society of Motion Picture and Television Engineers (SMPTE)
- Elected Member Society of Cable Television Engineers (SCTE)
- Elected Member Association of Computing Machinery (ACM)
- Past member of USA advisory board to National Science Museum of Israel
- Elected member of Cable TV Pioneers

PREVIOUS EMPLOYMENT:

Arthur D. Little, Inc (25 Years) - VP Communications, Info Technology, & Electronics
Motorola Communications Division (3 years) - project engineer in portable radio products
Bell & Howell Communications Company (5 years) - engineering manager for paging products

AWARDS & RECOGNITION:

- Seven U.S. patents
- Co-author of book on information systems technology: "The Arthur D. Little, Inc Forecast on Information Technology and Productivity", (1991: Wiley)
- Co-author of book on developing mobile radio technology: "New Opportunities at 220 MHz", (1991: National Association of Business and Educational Radio)
- IEEE Centennial Metal in 1984 and Millennium Metal in 2002
- A best paper award at 1989 International Conference on Consumer Electronics

**See website at <http://www.lipoff.org> for internet citations.

SUMMARY

Mr. Lipoff is president of IP Action Partners Inc, a network of consultants who provide services to stakeholders in the TIME (telecommunications, information technology, media, electronics, and ebusiness) field of interest. In providing his clients with consulting services, he draws upon his 40+ years of experience in a wide variety of technologies and industries to assist clients with knowledge-based consulting services involving complex business decisions. Clients turn to him for his unique ability to combine a deep understanding of industry dynamics with his equal depth in the underlying technologies. Because he is at home in either the board room or the laboratory, the services he provides range from top line revenue enhancement to operations and capital efficiency improvement working across all levels of the client organization. His clients include component suppliers, equipment manufacturers, service providers, and those who make investments in technology ventures. Typical assignments involve product development assistance, technology assessments, M&A corporate development, visioning the future, strategic planning, strategic business development support, competitive product positioning, change management, and overall business decision support.

He has assisted clients evaluate product development plans and apply technologies in activities ranging from conceptual studies to detailed development and implementation of products, services, and strategies. Mr. Lipoff has industry expertise in several high-volume manufacturing operations in electronics, electromechanical, and related industries. He has assisted clients in managing their technology, improving the product development process, managing complex external procurements, and resolving problems in design, procurement, and manufacturing.

Mr. Lipoff was employed 25 years by Arthur D Little, Inc (ADL) as VP and Director of Communications, Information Technology, and Electronics (CIE); 4 years by Bell & Howell Communications Company as a Section Manager, and 3 years by Motorola's Communications Division as a Project Engineer. At ADL he was responsible for the firm's global CIE practice. At both Bell & Howell and Motorola, he had project design responsibility for portable wireless

communications and paging products.

Stuart Lipoff has Bachelors Degrees in Electrical Engineering and in Engineering Physics, both from Lehigh University. He also has received a Masters Degree in Electrical Engineering from Northeastern University, and a MBA degree from Suffolk University.

Mr. Lipoff is a fellow of the IEEE Consumer Electronics, Communications, Computer, Circuits, and Vehicular Technology groups. He is a member of the IEEE Consumer Electronics Society (now Consumer Technology Society) National Board of Governors and was the Boston Chapter Chairman of the IEEE Vehicular Technology Society. He served as 1996-7 President of the IEEE Consumer Electronics Society and has served as Chairman of the Consumer Electronics Society Technical Activities and Standards Committees, served as VP of Publications for The Consumer Electronics Society with responsibility for The Society's academic and general publications, and as VP of Industrial Activities and Standards. Currently he serves as the Historian for The Consumer Technology Society. He has also chaired the search committee for Sony supported Mazura Ibuka Award in consumer electronics. As Vice President and Standards Group Chairman of the Association of Computer Users, he served as the ACU representative to The ANSI X3 Standards group. For the Federal Communications Commission's Citizens advisory committee on CB radio (PURAC), he served as Chairman of the task group on user rule compliance. He has been elected to membership in the Society of Cable Television Engineers (SCTE), The Association of Computing Machinery (ACM), and The Society of Motion Picture and Television Engineers (SMPTE).

Stuart Lipoff holds a FCC General Radiotelephone License and a Certificate in Data Processing (CDP) from the ACM supported Institute for the Certification of Computing Professionals (ICCP). He is a registered professional engineer in The Commonwealth of Massachusetts and also in the State of Nevada.

Mr. Lipoff holds seven USA patents and has published articles in Electronics Design, Microwaves, EDN, The Proceedings of the Frequency Control Symposium, Optical Spectra, and numerous IEEE publications. He has presented papers at many IEEE and other meetings. In the fall of 2000, he served as general program chair for The IEEE Vehicular Technology Conference on advanced wireless communications technology. He has organized sessions at The International Conference on Consumer Electronics and was the 1984 program chairman. He conducted an eight-week IEEE sponsored short course on Fiber Optics Systems Design. In 1984, he was awarded IEEE's Centennial Medal and in 2000 IEEE's Millennium Metal.

He served as a member of the USA advisory board to the National Science Museum of Israel and has presented a short course on international product development strategies as a faculty member of Technion Institute of Management in Israel. He has also served as a board member of The Massachusetts Future Problem-Solving Program.

Mr. Lipoff is internationally recognized as an authority and opinion leader in new economy related businesses and technology. Citations supporting his recognition can be found on his web site at <http://www.ipaction.com>.

Some examples of projects he has performed in the broadcasting, cable TV, computer products, consumer electronics, media, telecommunications, and wireless communications sectors include:

- For Comcast Corporation, he supported a number of their initiatives in public network wireless services. This support included evaluation of investment opportunities, valuation of various options for acquiring spectrum in FCC auctions, development of capital investment estimates for several alternative business opportunities, and the development of decision support models used by management to select between alternatives.
- For a provider of pay per call alternate operator services to prison inmates, he evaluated their technology and assets with an emphasis on their ability to associate calling and calling party phone numbers with databases combined with their employees with multiple language skills. Following this evaluation, he worked with the client to identify and plan for offering services to clients other than prison inmates. Examples of such clients included government operated call centers, hospitals, police departments, and telephone catalog sales call centers.
- For International Mobile Machines (IMM), a firm that licenses patents to cellphone OEMs, he developed a roadmap of future services, architectures, and technology to support alternative visions of the development of cellular. He then worked with the firm to generate R&D projects designed to increase the base of patents for IMM to license in the future.
- For International Finance Corporation (the venture capital group of The UN's World Bank), he evaluated an investment opportunity in Cellon Inc, a PRC based cellphone design house. This project included inspection of Cellon's facilities in the PRC and France as well as detailed review of Cellon's facility assets, technology strengths, and intellectual property.
- For the patent and licensing division of The General Electric Company, he has evaluated a number of patent portfolios in the wireless telecommunications space and provided feedback to the client on the application and value of these patents.
- For Tele2 (a pan European cellular and wireline telephone company), he supported their efforts to procure an advanced cordless telephone from contract manufacturers in China (PRC). This involved development of detailed technical specifications, coordination of a request for information, (RFI), and evaluation of the responses.
- For Millicom International (a cellular provider in several developing nations), he studied capital spending and developed best practice benchmarks. The work products were then employed in forward planning and to develop strategies for improvement of their financial performance. The project involved the collection of data from over 25 systems in 12 countries and developing capital efficiency metrics that were normalized to the specific geographic and demographic specifics of each system. The project not only provided a measure of present and historical capital efficiency but also provided a management system to be employed for the future.
- For the banks providing financing to The Iridium Mobile Satellite Service, he served as a technical advisor and assisted in developing the contracts between the banks and Motorola in

which Motorola secured the loan. As a technical advisor, he had extensive day-to-day interactions with Motorola's manufacturing and product design organization. The interactions included examination of the manufacturing cost, methods, and processes of Motorola's Subscriber Products Group cellphones, pagers, and related portable wireless data communications devices.

- For Sony USA, he supported a feasibility analysis of a planned investment by Sony into a wireless PCS carrier in the USA. This involved the development of alternative business models, financial analysis, and technical analysis in order to determine financial attractiveness and risk of proceeding with the venture.
- For Samsung Electronics Global Marketing, he developed a strategic framework for a line of portable and personal multimedia products to be introduced in the USA. The project included developing a common theme for a set of products that ranged from cellphones, MP3 music players, electronic books, PDAs, to hand-held games. One common theme was developed, product features and capabilities were detailed, and market adoption models were developed to forecast demand.
- For Korea Mobile Telephone, he supported the project that developed a strategic plan to position KMT relative to Korea Telecom.
- For Symbol Technology, a manufacturer of hand-held industrial computing products, he co-developed the protocol for a wireless local area network that was the basis for the current IEEE 802.11 wireless LAN standard. Later he worked with this same client to select voice over internet protocol (VoIP) codecs and algorithms that support the client's current product offering cordless industrial voice telephony over a quality of service (QoS) managed wireless IP network.
- Leadership of the project for CableLabs that studied the technology and economics of wireless personal communications technology. This project is highlighted in the history of CableLabs in their website as one of the significant accomplishments of The Labs. The project included the selection of CDMA technologies and the development of strategies to compete with incumbent cellular carriers. This effort led to the formation of a consortium between Sprint and the cable MSOs that has evolved into the present Sprint PCS business.
- For Rockwell Semiconductor, he supported a major project to identify and explore diversification opportunities beyond their current line of fax modems and compression chips. The project identified opportunities in wireless communications, broadband enterprise networks, and video signal processing. After identification of the opportunities, market forecasts were developed, competitors identified, and an analysis of the attractiveness versus fit with Rockwell was performed to support a request for board approval of diversification plans.
- For Cambridge Silicon Radio (UK), he worked with the client to develop a prioritized list of applications for their Bluetooth component offerings. The project mapped applications into specific target customers and based upon an analysis that considered the market needs with

CSR's capabilities, a prioritized roadmap of products was developed to steer the R&D portfolio.

- TCE markets cordless telephones in the USA under the GE Brand Name. The introduction of cost and size reduced imported products had an unexpected and immediate negative impact on market share. I was retained to develop modifications to the existing product to size reduce the existing product by reworking the existing inventory as well as develop a next generation product for new production. The project involved a combination of industrial design, antenna design, modification of the impedance matching electronics for the new antenna, and re-qualification of device under FCC regulations as a low power unlicensed communications device. The large telescoping antenna was replaced with a center loaded size reduced flexible antenna. An additional printed circuit board was designed and fabricated to tune and match the new antenna to the existing cordphone transceiver. Additional modifications to the transmitter involving component changes were developed to increase the transmitter power to overcome the additional loss in the loaded antenna. Manufacturing process sheets were designed and implemented in the factory to support the rework of the existing inventory. Engineering change orders were prepared for a new product design that included the changes on a single unified printed circuit board.
- For the investors in Mitel Semiconductor (Canada), he assisted the client value their telephone and business phone system telecommunications semiconductor device products and know-how in the firm. The project required a competitive review of Mitel Products and technology, and then evaluating the future likely needs of the marketplace. Our recommendations indicated which products should be the basis of further investment and most likely to be valued in a sale or licensing.
- For the flash memory global marketing group of Samsung, he led a project that explored the opportunities for flash memory in the emerging group of personal multimedia devices. These PMM devices ranged from PDAs, MP3 players, electronic books, to enhanced cellphones. The project developed visions and roadmaps for the rollout of these products and then translated this to the specific flash memory needs. A key aspect of the project was to determine the digital rights management and intelligence needs of the flash memory as content storage media. The analysis drove the Samsung developments and led to their participation in the SD flash consortium.
- For TRW, he participated in an assignment which reviewed all their non-classified military and defense technology to identify commercial applications. A number of systems applications in security for wireless communications and antifraud were developed which became the basis for successful spin-off operations. In addition, this project examined their GaAs design and production capabilities. The project resulted in foundry business for the GaAs fab in large volume consumer applications for direct to home satellite TV receivers.
- For a corporate cross-sector event organized by Motorola Corporate for all their divisions, he prepared presentations on the visions of the future in each of the major sectors in which Motorola has an interest. The presentations included: consumer electronics, medical, automotive, industrial electronics, and communications. The presentations provided a basis

for the cross-sector teams to engage in long term planning for each division.

- For a manufacturer of hand-held industrial computing products, he co-developed the protocol for a wireless local area network that was the basis for the current IEEE 802.11 wireless LAN standard. Later he worked with this same client to select voice over internet protocol (VoIP) codecs and algorithms that support the client's current product offering cordless industrial voice telephony over a quality of service (QoS) managed wireless IP network.
- Leadership of the project that studied the technology and economics of wireless personal communications technology. The project included the selection of CDMA technologies and the development of strategies to compete with incumbent cellular carriers. This effort led to the formation of a consortium between Sprint and the cable MSOs that has evolved into the present Sprint PCS business.
- For Bell South he contributed to a major operations improvement project involving developing forecasts for the future competitive environment, customer needs, a strategy to compete, and new business models. These forecasts were then applied to develop business redesign recommendations and a list of new services offerings.
- For a large multinational cellular service provider, he performed a review of their capital efficiency. The project involved the collection of data from over 25 systems in 12 countries and developing capital efficiency metrics that were normalized to the specific geographic and demographic specifics of each system. The project not only provided a measure of present and historical capital efficiency but also provided a management system to be employed for the future.
- For Tadiran, an OEM supplier of subscriber premise telephony equipment sold in multiple countries he engaged in an operations improvement project looking at all aspects of the design, manufacturing, distribution, and support of this high-volume consumer product. By means of including unique capabilities in the design of the next generation product that allowed for automatic configuration, he was able to improve the firm's performance in multiple dimensions. The new product allowed for a single universal product that reduced inventory costs, simplified distribution, and reduced order fulfillment time. A cost benefit analysis was performed to demonstrate the value of the significant investment required and showed Leadership of the project which developed the series of DOCSIS specifications for high-speed residential cable modems. The scope of work included developing a roadmap and strategic framework for evolving the business from simple high speed internet services to multimedia broadband services combining voice, data, and secure electronic content delivery. This project was performed under contract to the MCNS consortium of cable TV operators representing 85% of the subscriber base in North America and has since been adopted by the United Nations as a global telecommunications standard.
- Whistler is generally known as a large volume manufacturer of radar detectors sold to consumers to avoid speeding violations. He was retained to develop a new recreational marine product called Brite Buoy. This product was a two-part battery powered system consisting of a floating radio receiver that operates a flashing lamp and a handheld coded radio transmitter

operating at 900MHz that activates the lamp. The product was designed to allow a boat owner to find their mooring in the evening. He designed the unit to make maximum use of the existing radar receiver IF section in order to allow the benefits of large volume purchase of common components as well as reduce risk and time to market. He designed and developed a SAW Filter stabilized transmitter incorporating low-cost modulators used in garage door openers. The unit was design for manufacture using the clients existing high volume automated surface mount assembly lines.

- For B&H, he led the team that developed a digital radio paging product employing thick film hybrid RF and custom baseband integrated circuits. The project was designed for high volume manufacturing using in-house production systems.

EXPERT WITNESS ENGAGEMENTS

Case	Jurisdiction	Case Number	Witness for:
One World Technologies, Inc. v. United States, United States Department of Homeland Security, United States Customs and Border Protection, and Commissioner Kevin K. McAleenan	The United States Court of International Trade	18-00200	Plaintiff
Clearplay, Inc. v. DISH Network L.L.C. and EchoStar Technologies L.L.C.	The United States District Court for the District of Utah	2:14-cv-00191-DN	Defendant
Maxell, Ltd. v. Fandango Media, LLC	The United States District Court for the Central District of California	2:17-cv-07534-AG-SSx	Plaintiff
Sisvel International S.A., 3G Licensing S.A., and Sisvel S.P.A. v. HMD America, Inc. and HMD Global Oy	United States District Court for the Southern District of Florida; Miami Division.	20-22051-Civ-Gayles	Plaintiff
Sisvel International S.A. and 3G Licensing S.A. v. ZTE (USA) Inc. and ZTE Corporation	United States District Court for the Northern District of Texas	3:19-cv-01694-N	Plaintiff
The Chamberlain Group, Inc. v. One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment	The United States International Trade Commission	337-TA-1016	Respondent
Dynamics Inc. v. Samsung Electronics, Co., Ltd.	The United States International Trade Commission	337-TA-1170	Respondent

Case	Jurisdiction	Case Number	Witness for:
Universal Electronics, Inc. v. Roku Inc., et al	The United States International Trade Commission	337-TA-1200	Respondent - Roku
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	CBM2018-00033	Petitioner
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	CBM2018-00034	Petitioner
TCT Mobile (US) Inc. and TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.	The United States Patent Office Trial and Appeal Board	IPR2016-01494	Petitioner
TCT Mobile (US) Inc. and TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.	The United States Patent Office Trial and Appeal Board	IPR2016-01704	Petitioner
TCT Mobile (US) Inc. and TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.	The United States Patent Office Trial and Appeal Board	IPR2016-01861	Petitioner
TCT Mobile (US) Inc. and TCT Mobile, Inc. v. Wireless Protocol Innovations, Inc.	The United States Patent Office Trial and Appeal Board	IPR2016-01865	Petitioner
One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment v. The Chamberlain Group, Inc.	The United States Patent Office Trial and Appeal Board	IPR2017-00073	Petitioner
One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment v. The Chamberlain Group, Inc.	The United States Patent Office Trial and Appeal Board	IPR2017-00126	Petitioner
One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment v. The Chamberlain Group, Inc.	The United States Patent Office Trial and Appeal Board	IPR2017-00214	Petitioner
Live Person, Inc. v. 24/7 Customer, Inc. and 24/7 Customer International Holdings, Ltd.	The United States Patent Office Trial and Appeal Board	IPR2017-00610	Petitioner
Live Person, Inc. v. 24/7 Customer, Inc. and 24/7	The United States Patent Office Trial and Appeal Board	IPR2017-00616	Petitioner

Case	Jurisdiction	Case Number	Witness for:
Customer International Holdings, Ltd.			
One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment v. The Chamberlain Group, Inc.	The United States Patent Office Trial and Appeal Board	IPR2017-01132	Petitioner
One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment v. The Chamberlain Group, Inc.	The United States Patent Office Trial and Appeal Board	IPR2017-01137	Petitioner
Google Inc. v. Uniloc USA, Inc. and Uniloc Luxembourg, S.A.	The United States Patent Office Trial and Appeal Board	IPR2017-01683	Petitioner
Google Inc. v. Uniloc USA, Inc. and Uniloc Luxembourg, S.A.	The United States Patent Office Trial and Appeal Board	IPR2017-01684	Petitioner
Google Inc. v. Uniloc USA, Inc. and Uniloc Luxembourg, S.A.	The United States Patent Office Trial and Appeal Board	IPR2017-01685	Petitioner
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	IPR2018-00342	Petitioner
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	IPR2018-00343	Petitioner
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	IPR2018-00344	Petitioner
Comcast Cable Communications, LLC v. Promptu Systems Corporation	The United States Patent Office Trial and Appeal Board	IPR2018-00345	Petitioner
Google LLC v. Hammon Development International, Inc.	The United States Patent Office Trial and Appeal Board	IPR2020-00020	Petitioner
Google LLC v. Hammon Development International, Inc.	The United States Patent Office Trial and Appeal Board	IPR2020-00080	Petitioner

Case	Jurisdiction	Case Number	Witness for:
Google LLC, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. LG Electronics Inc., and LG Electronics U.S.A., Inc. v. Parus Holdings, Inc.	The United States Patent Office Trial and Appeal Board	IPR2020-00846	Petitioner
Google LLC, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. LG Electronics Inc., and LG Electronics U.S.A., Inc. v. Parus Holdings, Inc.	The United States Patent Office Trial and Appeal Board	IPR2020-00847	Petitioner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01157	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01158	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01159	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01160	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01161	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2020-01162	Patent Owner
Dell Inc. v. 3G Licensing S.A.	The United States Patent Office Trial and Appeal Board	IPR2021-00584	Patent Owner
Google LLC v. Parus Holdings, Inc.	The United States Patent Office Trial and Appeal Board	IPR2022-00279	Petitioner
Google LLC, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. LG Electronics Inc., and LG Electronics U.S.A., Inc. v. Parus Holdings, Inc.	The United States Patent Office Trial and Appeal Board	IPR2022-00355	Petitioner

Case	Jurisdiction	Case Number	Witness for:
Google LLC, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. LG Electronics Inc., and LG Electronics U.S.A., Inc. v. Parus Holdings, Inc.	The United States Patent Office Trial and Appeal Board	IPR2022-00358	Petitioner

CLIENTS

ASSA
 Caavo
 Charles Schwab
 Comcast
 Contec
 Dish
 Frost Bank
 GE MDS
 Google LC
 HID Global

Kajeet
 Local Radio
 Maxell
 Production Products Corp.
 RIM
 Roku
 Samsung
 Sisvel MCP
 Unified Patents
 WSOU