

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

Petitioners,

v.

MAXELL, LTD.,
Patent Owner

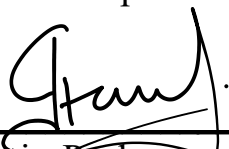
Case: IPR2025-01308

U.S. Patent No. 11,277,650

**DECLARATION OF RADOSTIN PACHAMANOV, PH.D.
CONCERNING PATENTABILITY OF U.S. PATENT NO. 11,277,650**

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and such willful false statements may jeopardize the validity of the patent which is under review in this proceeding.

Dated: April 9, 2026



Radostin Pachamánov, Ph.D.

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I. INTRODUCTION

1. My name is Radostin Pachamanov. I have been asked by Patent Owner in this IPR (Maxell, Ltd.) to respond to the Declaration of Dr. Joseph Paradiso (the “Paradiso Decl.”) and to provide my expert opinion regarding the patentability of U.S. Patent No. 11,277,650 (Ex. 1001, the “’650 Patent”) in view of the opinions in the Paradiso Decl.

2. Although I am being compensated at my usual consulting rate of \$550 per hour for my time reviewing materials and preparing this declaration, my opinions expressed here are my own. My compensation is in no way dependent on the outcome of this proceeding or upon the Court or jury accepting my opinions. I have no other financial interest in this matter or the parties thereto.

3. Depending on new information learned during discovery or positions taken throughout the IPR by Samsung or its experts, I may edit, add to, or otherwise refine the topics and expected testimony described here. I reserve the right to supplement my opinions based on new information.

II. BACKGROUND AND QUALIFICATIONS

4. My qualifications to testify about the ’650 Patent and the relevant technology are set forth in my curriculum vitae (“CV”), which I have attached here as Appendix A. My CV includes the matters in which I have testified (either at trial,

hearing, or by deposition) at least in the past five years. It also includes a list of selected publications within at least the past twenty years.

5. I will briefly summarize my qualifications to render opinions regarding this technology in the following paragraphs.

6. I graduated with a B.Sc. in Electrical Engineering with a focus in Telecommunications Networks from the Technical University of Sofia (Bulgaria) in 2002. In 2008, I received a Ph.D. in Telecommunications Engineering from the same university. My doctoral studies focused on telecommunications traffic engineering, Quality of Service (QoS) assurance, and traffic management in fixed broadband and wireless/mobile networks.

7. During my studies, I worked on a number of research projects funded by the government of the Republic of Bulgaria related to network planning and traffic management in fixed broadband and cellular networks. I also worked as a software developer for systems that implemented data transmission over networks for the purposes of remote monitoring and control, which helped me acquire firsthand experience with machine-to-machine communications.

8. I was also involved as a consultant in the “E-Street” initiative, which is part of the European Union’s “Intelligent Energy Europe” program, and participated in a research group aimed at developing recommendations for EU standards and legislation for managed outdoor networked lighting systems, where my contribution

focused on the use of wireless standards and technologies for implementing intelligent remote monitoring and control.

9. From January 2008 to July 2013, I was employed by Ericsson in Sofia, Bulgaria. While at Ericsson, I worked as a Solution Architect in its Multimedia department, responsible for Ericsson's portfolio of products, solutions, and offerings in its TV & Media Management, Billing, Fulfillment, Assurance, and System Integration solution areas. As a Solution Architect, I was involved in the offering, design, and implementation of client-specific solutions which required an extensive knowledge of the architecture, components, and operations of various telecommunications networks and technologies. Notably, I was involved in the design and acted as a technical project lead in the delivery of an end-to-end DVB-S2 Satellite TV system for a major telecommunications carrier, which included content acquisition, content distribution, conditional access control, and system monitoring and control.

10. In addition, I acted as the technical lead on a large system integration project financed by the Ministry of Interior in Bulgaria for a border surveillance system – an extremely complex system integration project that allowed the surveillance of an external European Union border by positioning surveillance equipment in a large geographical area. As part of that system, we designed and built a dedicated transport communication network allowing connection, secure data

transmission, and data collection between distributed system components such as sensors, radars, and surveillance cameras, enabling those devices to connect and exchange information across multiple access technologies and network protocols and ensuring they functioned together seamlessly. The surveillance data from the variety of devices was collected, displayed, and stored in centralized control centers, allowing personnel to monitor different content (live TV streams, radar data, device alarms, etc.) in real time, and control and manage the devices remotely.

11. Between 2011 and 2013, I also served as an Account Manager, where, among other things, I managed a team that designed network infrastructure for a “greenfield” telecommunication carrier.

12. Since 2013, I have worked in technical litigation consulting, specializing in providing computer science and electrical engineering expertise in legal disputes involving intellectual property and high-tech subject matters. In this capacity, I have worked on more than 50 technical matters related to telecommunications, television systems, data forensics, electronic devices, and computer networks. As part of my work, I have been deeply involved in patent portfolio analysis and litigation cases that require an extensive study of various network topologies, media routing protocols, and wireless standards.

13. Throughout my career in both industry and litigation consulting, I have worked on many different aspects of telecommunications and communication

systems in general. My experience spans the design, implementation, and analysis of diverse network architectures and technologies. Specifically, my expertise encompasses content and media distribution systems, including the protocols and mechanisms used to route, synchronize, and manage content and media across multiple client devices. I have extensive experience with network addressing, device identification and authentication, and dynamically distributing content to targeted devices based on those device identifications. I also have extensive experience and knowledge with wireless local area networks (WLAN) and mobile cellular networks, network routing, access control mechanisms, and distributed communication architectures.

III. UNDERSTANDING OF LEGAL STANDARDS

14. I am not a lawyer, but I have been informed by Maxell's counsel of the legal principles necessary to my patentability analysis. In this section, I set forth my understanding of these legal principles as they have been explained to me.

15. I understand that a (patentability) validity analysis of a patent claim consists of two steps. The first step is the construction (or interpretation) of any disputed claim terms. The second step is a comparison of the properly construed claims to the prior art.

A. Obviousness

16. I understand that a patent claim can be invalid under 35 U.S.C. § 103 if the claimed subject matter would have been “obvious” to a person of ordinary skill in the art as of the priority date of the patent based upon one or more prior art references. I understand that an obviousness analysis should consider each of the following so-called “*Graham* factors”: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any (such as unexpected results, commercial success, long-felt but unsolved needs, failure of others, copying by others, licensing, and skepticism of experts).

17. I understand that a conclusion of obviousness may be based upon either a single prior art reference or a combination of prior art references, particularly if the combination of elements does no more than yield predictable results. However, I understand that merely demonstrating that each of the claim elements was, independently, known in the prior art does not prove that a patent composed of several claim elements is obvious.

18. Moreover, I understand that it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in a way the claimed new invention does.

19. I further understand that, to determine obviousness, courts look to the interrelated teachings of multiple patents or other prior art references, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art.

20. I also understand that, in determining whether a combination of prior art references renders a claim obvious, it may be helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so. I understand, however, that the teaching, suggestion, or motivation to combine inquiry is not required and may not be relied upon in lieu of the obviousness analysis outlined above.

21. I understand that the following exemplary rationales may lead to a conclusion of obviousness: the combination of prior art elements according to known methods to yield predictable results; the substitution of one known element for another to obtain predictable results; and the use of known techniques to improve similar devices in the same way.

22. However, a claim is not obvious if the improvement is more than the predictable use of prior art elements according to their established functions. Similarly, a claim is not obvious if the application of a known technique is beyond the level of ordinary skill in the art.

23. Further, when the prior art teaches away from combining certain known elements, discovery of successful means of combining them is not obvious. I understand that similar subject matter may not be sufficient motivation for a person of skill in the art to combine references if the references have conflicting elements.

24. I understand that, in order to be used in an obviousness combination, a prior art reference must be “analogous.” I understand that a prior art reference may be analogous if it is in the same field of endeavor as the other references with which it is combined, or if the reference is reasonably pertinent to the solving the problems the inventors of the patent-at-issue sought to solve.

25. I understand that obviousness of a patent claim cannot properly be established through hindsight, and that elements from different prior art references, or different embodiments of a single prior art reference, cannot be selected to create the claimed invention using the invention itself as a roadmap. I understand that the claimed invention as a whole must be compared to the prior art as a whole, and courts must avoid aggregating pieces of prior art through hindsight that would not have been combined absent the inventors’ insight.

26. I understand that obviousness is not established by simply combining previously known elements from the prior art. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. An invention is unpatentable as obvious

if the differences between the patented subject matter and the prior art would have been obvious at the time of invention to a person of ordinary skill in the art.

27. I understand that obviousness of a patent cannot properly be established by mere conclusory statements. Instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. When an expert opines that all the elements of a claim disparately exist in the prior art, the expert should provide the rationale to combine the disparate references. A reason for combining disparate prior art references is a critical component of an obviousness analysis. The obviousness analysis should be made explicit and needs to provide an articulated reasoning with some rational underpinning to identify the reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.

28. I also understand that inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. This is another reason why merely pointing to the elements being known in the art in separate locations is not the end of the obviousness inquiry.

29. I understand that technical experts may testify to matters like the level of skill in the art at the time of the invention and what a skilled artisan might find obvious in light of the prior art without addressing objective indicia of non-

obviousness. However, where an expert purports to testify not just to certain factual components underlying the obviousness inquiry, but to the ultimate question of obviousness, the expert must consider all factors relevant to that ultimate question, including all objective evidence of nonobviousness.

30. I understand that one of the so-called *Graham* factors that must be considered in determining obviousness is the existence of any secondary considerations, which tend to show that a patent claim is not obvious. Such secondary considerations of nonobviousness of a patent include (1) long-felt and unmet need in the art that was satisfied by the claimed invention of the patent; (2) failure of others to achieve the results of the claimed invention; (3) commercial success or lack thereof of the products and processes covered by the claimed invention; (4) deliberate copying of the claimed invention by others in the field; (5) taking of licenses under the patent by others; (6) whether the claimed invention was contrary to the accepted wisdom of the prior art; (7) expression of disbelief or skepticism by those skilled in the art upon learning of the claimed invention; (8) unexpected results achieved by the claimed invention; (9) praise of the claimed invention by others skilled in the art; and (10) lack of contemporaneous and independent invention by others.

31. I understand that each of these considerations may form an independent basis for nonobviousness of a patent. I also understand that the fact that another

person simultaneously and independently created the same invention claimed in an asserted patent can serve as an indication that the invention was obvious

32. I also have been informed by counsel that there must be a nexus between any such secondary considerations and the claimed invention.

B. Claim Construction

33. I understand that a patent may include two types of claims: independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim or another dependent claim and includes all the limitations that it recites in addition to all of the limitations recited in the claim or claims from which it depends.

34. I understand that the claim construction exercise begins with the language of the claims themselves, and that the general rule is that claim terms are given their plain and ordinary meaning to a person of ordinary skill in the art, in view of the specification of the patent, at the time of the invention. I also understand that the intrinsic evidence (i.e., the claims, written description including the figures, and prosecution history) are the primary sources used in interpreting claim language.

35. I understand that if disputed claim language is clear on its face, the intrinsic evidence should be consulted to determine whether some deviation from the ordinary meaning of the claim language is warranted.

36. When the disputed language is not clear on its face, I understand that the intrinsic evidence should be used to resolve, if possible, any lack of clarity. I also understand that the specification is the best evidence of what the patentee intended the term to mean when there is no clear meaning of a claim term, and that the prosecution history may also shed light on the meaning of a claim term, and that the prosecution history may also shed light on the meaning of ambiguous terms. However, I understand that it is improper to import limitations from the specification into a patent claim through claim construction.

37. I have been informed that sometimes the ordinary meaning of claim language as understood by a person of ordinary skill in the art may be readily apparent even to lay person. I understand that claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.

38. I have applied the ordinary and customary meaning that the terms would have had to a person of ordinary skill in the art at the time of the invention, September 27, 2006 (the '650 Patent's priority date), in view of the patent's specification. In other words, I have interpreted the remaining terms in accordance with their "plain and ordinary" meaning.

39. I understand that Dr. Paradiso purported to interpret the claims according to their plain and ordinary meaning to a POSITA at the time of the invention (September 27, 2006). *See* EX1002, Paradiso Decl., ¶¶ 54–57.

C. Level of Ordinary Skill in the Art

40. I understand that claims are to be interpreted from the viewpoint of one of ordinary skill in the relevant art. To determine the level of skill that would be “ordinary,” I understand that a person of ordinary skill must generally have the capability of understanding the general principles that are applicable to the pertinent art.

41. I am informed that the factors to be considered in determining the level of ordinary skill in the art are: (1) the education level of active workers in the field, (2) the type of problems encountered in the art, (3) prior art solutions to those problems, (4) the speed with which innovations are made, and (5) the sophistication of the technology in the art.

42. I have also been asked to assume that the relevant time period for determining the level of skill in the art for the ’650 Patent is its earliest claimed priority date, September 27, 2006.

43. In the case of the ’650 Patent, these general principles include the concepts of content distribution and delivery to a plurality of devices over a network. A person of ordinary skill in the art should be familiar with these principles.

44. In my opinion, “a person of ordinary skill in the art” in the field of the ’650 Patent would have had a working knowledge of content distribution and delivery to a plurality of devices technology. The person would have gained this knowledge through an undergraduate Bachelor of Science degree in Computer Science or Electrical Engineering or equivalent degree and at least two years of experience working in the field content distribution and delivery systems. More education (*e.g.*, a Master’s degree) or work experience in a relevant field may compensate for a deficit in one or the other relevant qualifications stated above. This is based on my review of the ’650 Patent and my knowledge of those who were working in the field at the time of the invention.

IV. MATERIALS CONSIDERED

45. Among the materials I specifically considered at the time I formed my opinions on patentability are the ’650 Patent (EX1001); the ’650 Patent’s prosecution history (EX1003); the Paradiso Declaration (EX1002) and the materials cited therein; Samsung’s Petition for institution of an Inter Partes Review (IPR) of the ’650 Patent, matter number IPR2025-1308 (“’650 IPR Petition”) and related filings from that matter; the alleged prior art relied upon by Dr. Paradiso; Dr. Paradiso’s deposition transcript dated March 13, 2026; and the other materials that I specifically cite to and mention throughout this declaration.

46. In addition to these materials, I relied upon my decades of experience and expertise in computer science and electrical engineering, particularly in system for content distribution and reception in networks. I have also taken into account the knowledge and background principles that a person of ordinary skill in the art would be familiar with at the time of Patent Owner's invention (no later than September 27, 2006).

V. BACKGROUND OF THE TECHNOLOGY OF THE '650 PATENT

A. Overview of the '650 Patent

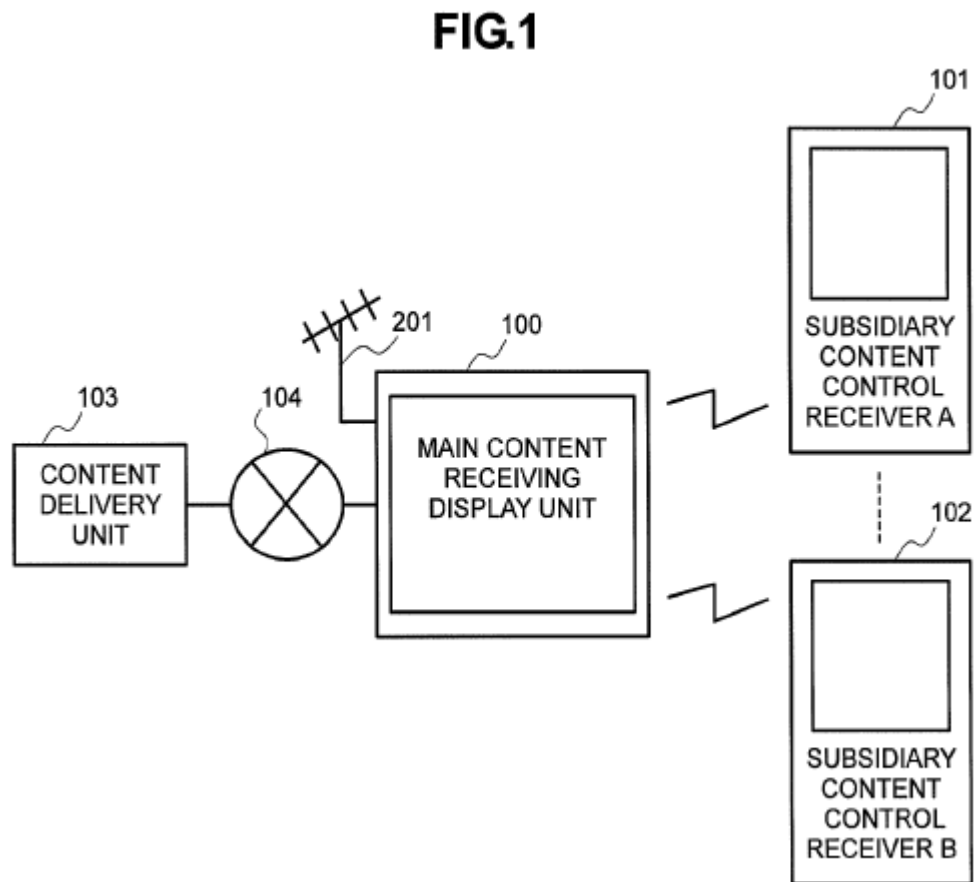
47. Before discussing my specific opinions on patentability, I will first review the '650 Patent's disclosures as they would have been viewed by a person of ordinary skill in the art. My discussion describes only certain examples of the inventions discussed in the '650 Patent, and my description here is in no way meant to suggest that the claimed inventions are limited to these examples. The inventions are limited only by the claims.

48. The '650 Patent is entitled "Contents Receiving System and Client" and was awarded to inventors Hideki Kamimaki, Akira Date, and Akira Tanaka. It was filed on April 22, 2020, as a continuation of Application No. 16/387,841 (filed on April 18, 2019), and ultimately claims priority to Japanese Patent Application No. 2006-261645, which was filed on September 27, 2006. The priority date of this

patent is no later than this date. I understand that the '650 Patent's anticipated expiration date is on September 26, 2027.

49. The '650 Patent is directed to coordinating the transmission of subsidiary contents to a plurality of subsidiary terminals from contents stored in a main terminal by providing a system to coordinate and synchronize display tasks between a main terminal and subsidiary terminals using subsidiary terminal specific ID information. *See* EX1001, '650 Patent, 2:3–15.

50. As an exemplary embodiment, Figure 1 of the '650 Patent is a block diagram illustrating the structure of a contents receiving system:



Reproduction of Fig. 1 of the '650 Patent

51. From Fig. 1, the '650 Patent discloses a content delivery unit 103 that sends main content receiving display unit 100 a video stream including a main content multiplexed with various subsidiary contents via broadband Internet 104. *See* EX1001, 2:57–62, 1:27–36, Fig. 1. In addition, the main content receiving display unit 100 also receives television broadcast signals (digital and/or analog broadcasting) using broadcast receiver 201 where main content receiving display unit 100 receives, from content delivery unit 103 and broadcast receiver 201, a plurality of video streams including a plurality of main contents respectively multiplexed with various subsidiary contents. *See* EX1001, 2:62–3:10, Fig. 1.

52. Further, the '650 Patent discloses, as an exemplary embodiment, that the subsidiary contents included in main content receiving display unit 100 may be, for example, multilanguage audio data, an electronic program guide, an electronic content table or Electronic Contents Guide “ECG,” subtitle data, commercial information, HD (High Definition) or SD (Standard Definition) resolution information, encoding information of contents, and/or home page data on internet or metadata. *See* EX1001, 7:3:17–47, 5:51–56, 8:50–9:15, 13:3–14, Fig. 1 and 6.

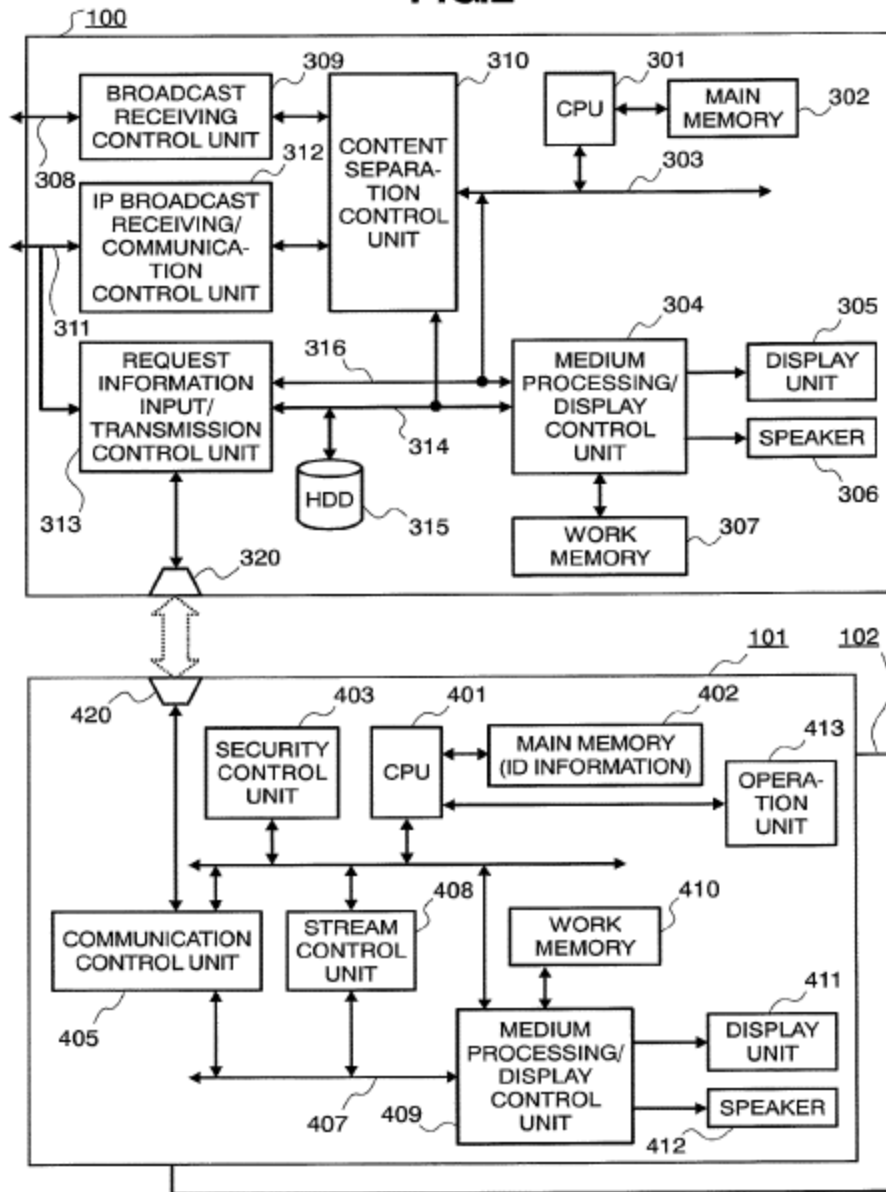
53. Moreover, the '650 Patent discloses, as an exemplary embodiment, that subsidiary content control receiver A 101 and/or B 102 receive desired subsidiary content or main content from among contents in the main content receiving display

unit 100 via a wireless or wired network. *See* EX1001, 3:17–24 and 48–54, 7:40:42. For example, specific ID information related to each subsidiary content control receiver A 101 and B 102 is stored in each and used to receive subsidiary contents from main content receiving display unit 100. *See* EX1001, 3:60–4:46.

54. Specifically, the '650 Patent discloses, as an exemplary embodiment, that upon receiving an acquisition request, including the specific ID information, for subsidiary contents from one or both the subsidiary content control receiver A 101 and/or B 102, the main content receiving display unit 100 processes the acquisition request by separating one or more desired subsidiary contents from a content or video stream on the basis of the specific ID information. *See* EX1001, 5:57–6:6.

55. For example, the main content receiving display unit 100, then, constructs and stores communication packets or packet data containing a compressed and encoded subsidiary content together with the specific ID information for transmission to subsidiary content control receiver A 101 and/or B 102. *See* EX1001, 6:7–57. For example, HDD 315 in main content receiving display unit 100 stores a plurality of main content, respective subsidiary contents, and the communication packets or packet data, which also include specific ID information. *See* EX1001, 7:24–54, 11:28–42. Figure 2, reproduced below, is an expounded example of a contents receiving system:

FIG.2



Reproduction of Fig. 2 of the '650 Patent

56. From Fig. 2, the '650 Patent discloses, as an exemplary embodiment, that the main content receiving display unit 100 includes a broadcast receiving control unit 309 and IP broadcast receiving/communication control unit 312 for receiving stream of television broadcast signal via broadcast wave I/F ("interface")

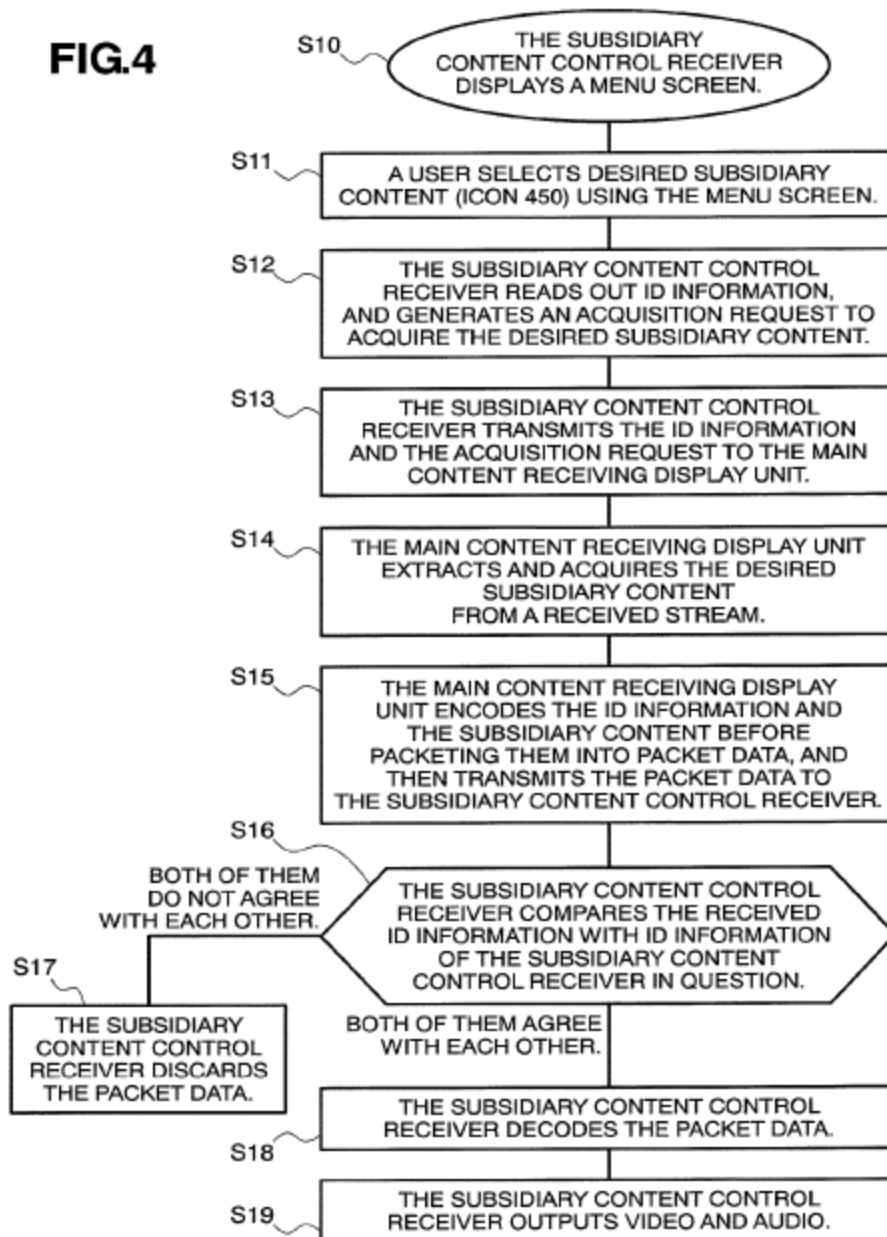
308 and stream of video encoded by MPEG-2 or the like via network I/F 311, respectively. *See* EX1001, 5:18–50. For example, streams received in broadcast receiving control unit 309 and IP broadcast receiving/communication control unit 312 are separated between main contents (*e.g.*, moving picture content) and subsidiary contents (*e.g.*, including subtitle data, EPG data, supplementary audio data, and other broadcast program related information) using content separation control unit 310. *See* EX1001, 5:51–65. For example, the separation of the subsidiary content by content separation control unit 310 is performed in response to an acquisition request processed in request information input/transmission control unit 313 from subsidiary content control receiver A 101 or B 102. *See* EX1001, 5:57–65.

57. For example, the subsidiary content control receiver A 101 or B 102 generates the acquisition request to acquire subsidiary content using CPU 401, which reads out specific ID information stored in main memory 402. *See* EX1001, 9:34–57. For example, CPU 401 outputs the specific ID information to a communication control unit 405 where an association between the acquisition request and the specific ID information is made and sent to main content receiving display unit 100 via radio interface unit (sub) 420 and radio interface unit 320. *See id.* In another embodiment, the association can also be constructed and stored in main content receiving display unit 100 when the subsidiary content control receivers A 101 or B

102 communicates specific ID information to broadcast wave I/F 308 or network I/F 311. *See* EX1001, 14:41–15:3, Fig. 8.

58. For example, from the acquisition request, the request information input/transmission control unit 313 instructs medium processing/display control unit 304 to perform encoding control to compress and encode subsidiary content processed in content separation control unit 310 including adding specific ID information being communication packets or packet data, which is stored in work memory 307 or HDD 315 and transmitted to subsidiary content control receiver A 101 and/or B 102 via radio interface unit 320. *See* EX1001, 6:30–7:56.

59. The '650 Patent also describes, in exemplary Figure 4, a flow chart of the steps of the contents receiving system acquiring subsidiary content. *See* Ex. 1001, 11:4–56. Figure 4 is reproduced below:

FIG.4*Reproduction of Fig. 4 of the '650 Patent*

60. For example, in step S12, CPU 401 in subsidiary content control receiver A 101 or B 102 generates an acquisition request to acquire subsidiary content based on user inputs described in steps S10 and S11. *See* EX1001, 11:4–18.

For example, specific ID information is read from main memory 402, and

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communication control unit 405, in step S13, adds the specific ID information to the acquisition request for transmission to the main content receiving display unit 100 via radio interface (sub) 420. *See* EX1001, 11:15–22.

61. For example, in steps S14 and S15, the main content receiving display unit 100's content separation control unit 310 acquires a request for subsidiary content included in the acquisition request, including encoding subjected to decoding to generate reproducible subsidiary content and resolution information compatible with display unit 411 of subsidiary content control receivers A 101 or B 102. *See* EX1001, 11:23–28. For example, the content separation control unit 310 authenticates and extracts the subsidiary content from a received stream, including the specific ID information. *See* EX1001, 11:28–37. Consequently, the request information input/transmission control unit 313 compresses and encodes the stored specific ID information and the extracted subsidiary content for conversion into communication packets or packet data for transmission to subsidiary content control receiver A 101 or B 102 via radio interface unit (main) 320. *See* EX1001, 11:37–42.

62. For example, in step S16, the communication control 405 of the subsidiary content control receiver A 101 or B 102 compares the specific ID information in the communication packets or packet data with the one stored in main memory 402. *See* EX1001, 11:43–48. If the specific ID information do not agree with each other, then in step S17, the communication packets or packet data are

discarded; otherwise, in step S18, the communication control unit 405 decodes the subsidiary content for display or output, in step S19, on display unit 411 or speaker 412, respectively. *See* EX1001, 11:48–56.

63. Hence, the '650 Patent discloses a novel contents distribution and receiving system, which includes a main terminal including contents for transmission to a plurality of subsidiary terminals according to a user's taste or preference. The delivery of content based on a user's preference was ahead of its time in 2006 because consumers were accessing content either from a cable provider, a brick-and-mortar store like Blockbuster or mail-order DVD rental service like Netflix.

B. Prosecution History of the '650 Patent

64. The '650 Patent is the result of a thorough examination where the Examiner considered prior art analogous to that in the Petition and found the invention patentable. *See* EX1003, 22–25, 210, 251–54. During prosecution, the Examiner issued rejections over a combination of references. *See* EX1003, 115–25, 197–209.

And Reichman et al disclose the first controller storing device specific ID information of the plurality of the subsidiary equipments, and storing a plurality of information for identifying the content to be transmitted to the subsidiary equipments in association with the device specific ID information; the second controller storing device specific ID

EX1003, 121–122, 206.

65. In response, the Applicant amended the claims to clarify the core invention: a main terminal that stores “association information” linking specific content to specific device IDs and then uses that stored association to determine which content to transmit to which terminal. *See* EX1003, 93–114. The Examiner found these arguments persuasive. *See* EX1003, 17–25 (stating “[t]he art of record did not teach or suggest the claims taken as whole”). The Notice of Allowance, particularly pointed to the prior art failing to teach claim limitations [1f]–[1l] and [4g]–[4p] including the claimed controller that stores and uses “association information” where that information “defines that one of the contents...is associated with one of the device specific ID information” to transmit the correct content. *See* EX1003, 22.

C. Claims of the '650 Patent At Issue

66. The challenged claims are 1–4. The language of these claims is as follows:

'650 Patent Claim Element Number	Claim Text
[1pre]	A contents reproducing system comprising:
[1a]	a main terminal; and
[1b]	a plurality of subsidiary terminals,
[1c]	wherein the main terminal comprises: a storage storing the contents;
[1d]	[wherein the main terminal comprises...] a first display displaying the contents; and
[1e]	[wherein the main terminal comprises...] a first controller controlling transmission/reception with the subsidiary terminals,

'650 Patent Claim Element Number	Claim Text
[1f]	wherein the first controller is configured to: store a plurality of device specific identification (ID) information of the subsidiary terminals,
[1g]	[wherein the first controller is configured to...] store a plurality of content information for identifying each of the contents, and
[1h]	[wherein the first controller is configured to...] store association information for transmitting one of the contents to one of the subsidiary terminals,
[1i]	wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information,
[1j]	wherein the plurality of subsidiary terminals comprise: a second display displaying the content; and
[1k]	[wherein the plurality of subsidiary terminals comprise...] a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal, and
[1l]	wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be connected, based on the association information then the subsidiary terminal reproduces the received content on the second display.
[2]	The contents reproducing system according to claim 1, wherein the main terminal includes a converter down-converting the content and transmits the down-converted content to the subsidiary terminal
[3]	The contents reproducing system according to claim 1, wherein the main terminal includes a network interface and acquires the content from an external server via the network interface.
[4pre]	A contents reproducing system comprising:
[4a]	a main terminal;
[4b]	first subsidiary terminal; and
[4c]	second subsidiary terminal,
[4d]	wherein the main terminal comprises: a storage storing the contents;
[4e]	[wherein the main terminal comprises...] a first display displaying the contents; and
[4f]	[wherein the main terminal comprises...] a first controller controlling transmission/reception with the first subsidiary terminal and the second subsidiary terminal,

'650 Patent Claim Element Number	Claim Text
[4g]	wherein the first controller is configured to: store first device specific identification (ID) information of the first subsidiary terminal and second device specific ID information of the second subsidiary terminal,
[4h]	[wherein the first controller is configured to...] store first content information for identifying first content among the contents and second content information for identifying second content among the contents, and
[4i]	[wherein the first controller is configured to...] store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal,
[4j]	wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information,
[4k]	wherein the first subsidiary terminal comprises: a second display displaying the content; and
[4l]	[wherein the first subsidiary terminal comprises...] a second controller controlling transmission/reception with the main terminal, the second controller storing the first device specific ID information for identifying the first subsidiary terminal and transmitting the first device specific ID information to the main terminal when connecting to the main terminal,
[4m]	wherein the second subsidiary terminal comprises: a third display displaying the content; and
[4n]	[wherein the second subsidiary terminal comprises...] a third controller controlling transmission/reception with the main terminal, the third controller storing the second device specific ID information for identifying the second subsidiary terminal and transmitting the second device specific ID information to the main terminal when connecting to the main terminal, and wherein,
[4o]	when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal, and
[4p]	when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific ID information, the main terminal transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal.

VI. CLAIM CONSTRUCTION FOR THE '650 PATENT

67. For any terms not specifically construed, I have applied the plain and ordinary meaning that the terms would have had to a person of ordinary skill in the art at the time of the invention of September 27, 2006 (the '650 Patent's priority date) in view of the patent's specification.

68. I understand that Dr. Paradiso purported to interpret the claims according to their plain and ordinary meaning to a POSITA at the time of the invention (September 27, 2006). *See* EX1002, Paradiso Decl., ¶¶ 54–57.

A. **“a [second/third] display displaying the content” (Claims 1, 4)**

69. Petitioners and Dr. Paradiso (now herein Petitioner) assert that it is unclear what “the content” refers back to. *See* EX1002, p. 81 n.2. Petitioner's and Dr. Paradiso's argue that it could refer to both “one of the contents” and “the contents.” *See id.* This interpretation is incorrect. Moreover, I have been informed by counsel that Petitioner proposes the following construction for this term:

Plain and ordinary meaning, which is “displaying a content on the second/third display, where the content displayed on the second/third display (i) need not be displayed concurrently with any content on the first display or (ii) need not be related to content displayed concurrently on any other subsidiary terminal.

EX2015, 22. Petitioner's proposed construction unnecessarily introduces confusion by breaking up the term into a two-part test that is far from the plain and ordinary meaning of the term. To be clear, I agree that “the content” is “one of the contents”;

however, I disagree that “the content” includes “the contents.” It appears that either construction seeks to read out antecedent basis when arguing that “the content” refers back to “the contents,” “(i) need not be displayed concurrently with any content on the first display or (ii) need not be related to content displayed concurrently on any other subsidiary terminal.”

70. In my opinion, the term “displaying the content” as appearing in Claims 1 and 4 would be understood by a POSITA as displaying the same “one of the contents” on the main terminal—not “the contents.” For example, Claim 1 of the ’650 Patent recites:

A **contents** reproducing system comprising:

a **main terminal**; and

a **plurality of subsidiary terminals**,

wherein the **main terminal** comprises:

a storage **storing the contents**;

a first display **displaying the contents**; and

a first controller . . .

wherein the first controller is configured to:

. . . wherein the association information defines that **one of the contents** identified by the content information is associated with one of the device specific ID information,

wherein the **plurality of subsidiary terminals** comprise: a second display **displaying the content** . . .

EX1001, Claim 1; *see also id.*, Claim 4. The claim language clearly indicates that “second display displaying the content” refers back to “**one** of the” multiple “contents” stored and displayed on the main terminal. *See id.* (emphasis added). Petitioner’s and Dr. Paradiso’s proposed construction contradicts this plain and ordinary claim language. “[D]isplaying the content” does not exist in isolation—it is directly tied to the preceding claim limitations. Petitioner and Dr. Paradiso are seeking to read the claim term divorced from its context, effectively rewriting what the patentee deliberately claimed. Further, since each claim limitation refers back to earlier language, a POSITA would understand from the context of the claim that “the content” displayed on the subsidiary terminal includes the entire “one of the contents” displayed in the main terminal.

71. My understanding of the plain and ordinary meaning of the term is consistent with the disclosures of the ’650 Patent. For example, the ’650 Patent discloses, for example, that “contents” includes “main content [that] is, for example, moving picture content such as television program” “displayed on the main content receiving display unit 100.” EX1001, 3:11–16. Additional examples of “contents” include “subsidiary content from the main content display receiving unit 100 . . . being selected from among streams received by the main content display receiving unit 100.” *See id.*, 3:17–24. Moreover, “subsidiary content includes, for example, multilanguage audio data . . . , an electronic program guide [EPG]. . . , an electronic

content table . . . , and additional information (including subtitle data and commercial information).” *See id.*, 3:25–33; *see also id.*, 3:33–47, 5:51–56.

72. The ’650 Patent discloses that “main content and subsidiary content are simultaneously displayed on a television receiver,” which is the main content receiving display unit 100. *See id.*, 1:37–39; *see also id.* 3:5–6. Furthermore, subsidiary content receiver control receivers A 101, B 102 “display the subsidiary content on the display unit” where the subsidiary content is “one of the contents” displayed on main content receiving display unit 100. *See id.*, 3:17–22. As such, I disagree with Petitioner’s and Dr. Paradiso’s inconsistent and incorrect construction of the term.

VII. SUMMARY OF PETITIONER’ PROPOSED GROUNDS

73. The Petition raises four grounds of alleged obviousness based on the following four references. WO 2005/094080 (“Shindo”) (EX1004), Japanese Patent Appl. Pub. No. 2003-208375 (“Sasaki”) (EX1006), U.S. Patent Appl. Pub. No. 2004/0010687 (“Futa”) (EX1009), and U.S. Patent No. 5,619,250 (“McClellan”) (EX1010).

Ground	’650 Claims	Type of Challenge	References
1	1-4	§ 103	Shindo
2	1-4	§ 103	Sasaki
3	1-4	§ 103	Futa in review of McClellan

VIII. THE PRIOR ART

74. Here, I will provide a brief overview of each of the references used in Dr. Paradiso's obviousness combinations.

A. Shindo (EX1004)

75. WO 2005/094080 ("Shindo"), published on October 6, 2005, is generally directed to a "linked display system composed of an accumulation display device as a main display device, and mobile information terminals A and B as sub-display devices." EX1004, ¶19.

76. Shindo discloses a stand alone display device 1 receiving program content, including "index information" specifying scenes and "trigger information" indicating available playback modes (e.g., replay). EX1004, ¶7. Specifically, Shindo discloses the stand alone display device 1 establishing a connection with a mobile information terminal A or B, receiving "management information 19" including "mode information 25" being replays or highlights. EX1004, ¶33; *see also id.*, Figs. 1, 7, and 9.

77. When the stand alone display device 1 detects mode information 25 in management information 19 and matching mode information 16 in trigger information 15, it retrieves snippets of the program content as replays, highlights, or partial program content for transmission and display on mobile information terminal A or B. *See* EX1004, ¶¶28, 33, and 42.

B. Sasaki (EX1006)

78. Japanese Patent Appl. Pub. No. 2003-208375 (“Sasaki”), published on July 25, 2003, is generally directed to a system that “divides content into portions according to the free memory capacity of the content area of a personal digital assistant [PDA].” EX1006, Abstract; *see also id.*, ¶57.

79. Sasaki discloses that PDA 2 does not have the same memory capacity as PC home server device 1; therefore, segments (e.g., portions) of content is transmitted to PDA 2 as delimiter information. *See* EX1006, ¶71. The PC home server device 1 transmits the segment of content after it verifies the display and memory capacity of PDA 2. *See* EX1006, ¶132. The segment of content is, for example, a paragraph, chapter, article, or one to several lines of an electronic newspaper. *See* EX1006, ¶139.

C. Futa (EX1009)

80. U.S. Patent Appl. Pub. No. 2004/0010687 (“Futa”), published on January 15, 2004, is generally directed to a “content distributing system ... composed of a broadcast receiving device, a TV, a PC, [and] a data-communication controlling device.” EX1009, ¶49. However, while Futa discloses using “judgment tables” for authorization, it does not teach or suggest using stored association information to define a link between a specific content and a specific device to determine transmission.

81. Futa describes the data-communication controlling device storing “judgment tables each of which includes additional information and a device ID of a reception device belonging to a category specified as being permitted to use content having the additional information.” EX1009, Claim 15. When routing content, the device authenticates the receiving device using its ID and certificate, checks the content's additional information, selects the corresponding judgment table, and determines if the receiving device’s ID is present in the table to permit or prohibit transmission. *See* EX1009, Claim 1. The reference focuses on this category-based authorization.

D. McClellan (EX1010)

82. U.S. Patent No. 5,619,250 (“McClellan”) is generally directed to an operating system for set top box utilizing dynamic system upgrades. *See* EX1010, 1:25–30. McClellan discloses that the OS comprises “modules of code wherein each module of code performs a particular function.” EX1010, Claim 1.

83. McClellan describes downloading new system modules and adding corresponding “description records” to a “configuration description block,” allowing the system to use the new module without restarting. EX1010, 4:13-49. The reference focuses on this modular architecture for real-time system upgrades.

IX. ANALYSIS OF INSTITUTED GROUNDS

84. I have analyzed each of the instituted grounds. As explained in greater detail below, it is my opinion that none of these grounds shows by the preponderance of the evidence that Claims 1–4 of the '650 Patent are unpatentable as obvious.

85. In my opinion, a POSITA would understand that the '650 Patent is not just generally disclosing a main device communicating with and distributing content to a plurality of subsidiary devices. Instead, the '650 Patent teaches delivering personalized content to various specific users' devices from a plurality of contents, which can also be displayed on a main terminal. *See* EX1001, 11:57–65. The '650 Patent achieves this personalized content delivery system using a specific **content-to-device mapping** architecture (*e.g.*, one to one mapping) that is not disclosed in any of the alleged prior art.

86. For example, A POSITA, reading Claim 1 of the '650 Patent, excerpt reproduced below,

- [1.pre] 1. A contents reproducing system comprising:
 - [1.a] a main terminal; and
 - [1. b] a plurality of subsidiary terminals,
 - [1.c] wherein the main terminal comprises:
 - a storage storing the contents;
 - [1.d] a first display displaying the contents; and
 - [1. e] a first controller controlling transmission/reception with the subsidiary terminals,
 - [1.f] wherein the first controller is configured to:
 - store a plurality of device specific identification (ID) information of the subsidiary terminals,
 - [1.g] store a plurality of content information for identifying each of the contents, and
 - [1.h] store association information for transmitting one of the contents to one of the subsidiary terminals,
 - [1.i] wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information,
 - [1.j] wherein the plurality of subsidiary terminals comprise:
 - a second display displaying the content; and
 - [1.k] a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal, and
 - [1.l] wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be connected, based on the association information then the subsidiary terminal reproduces the received content on the second display.

EX1001, Claim 1 (annotated), would understand from claim elements [1.f] through [1.i] that the '650 Patent's contents delivery system discloses a specific **content-to-device mapping** architecture for content personalization. Specifically, "the first controller" in the main terminal stores (1) "a plurality of device specific identification (ID) information" regarding the subsidiary terminals, (2) "a plurality of content information" for identification of each stored contents, and (3)

“association information for transmitting” one of the stored contents to one of the subsidiary terminals. *Id.*, Claim 1 (referring to claim elements [1.f] thru [1.g]).

87. The **content-to-device mapping** architecture is facilitated using the association information, which is defined in claim element [1.i] as being “one of the contents identified by the content information is associated with one of the device specific ID information.” *Id.* Using this **content-to-device mapping** architecture, the main terminal sends personalized content to subsidiary terminals. *See id.* Claim 4 of the ’650 Patent further makes explicit this **content-to-device mapping** architecture by detailing how the system is capable of sending a first content to a first subsidiary terminal and a second content to a second subsidiary terminal, and even reversing the terminals receiving the contents. *See id.*, Claim 4 (referring to claim elements [4.o]–[4.p]).

88. In contrast, Shindo discloses a fundamentally different system that is not based on a **content-to-device mapping** architecture (one to one mapping). Instead, it is centered around a **trigger information-to-mode** for blindly transmitting portioned content to multiple mobile terminals, which requested a certain mode. For example, Shindo discloses a main display device displaying a live broadcast program content and one or more mobile information terminals for playing replays or highlights. *See* EX1004, ¶5. The main display device receives a broadcasted program content and “trigger” information that relates to a special

playback of the program content on the mobile information terminals. EX2014, ¶6. The program content includes index information regarding the broadcasted program being played, and the trigger information includes mode information for the special playback (e.g., highlights or replays) of the program content. *See id.*, ¶¶5–6. Using the combination of index information and trigger information, the main display device distributes in a wholesale fashion a specific highlight (i.e., reconstructed extracted partial program content) of the content to all mobile information terminals, which have selected the same mode information contained in the received trigger information. *See id.* ¶¶5, 7–8.

89. A POSITA would not equate Shindo’s **trigger information-to-mode** with the ’650 Patent’s **content-to-device mapping** architecture because Shindo is a completely different system that does not implement the claimed associating content information with device specific identification (ID) for distribution of content to mobile information terminals. Shindo’s **trigger information-to-mode** is not the same as storing an association information that defines how one identified content is associated with one identified device specific identification (ID). A POSITA would not have been motivated to redesign Shindo’s **trigger information-to-mode** for reconstructing content for the purposes of content replays or highlights to achieve a system that stores and uses association information that maps identified content to device specific identification (ID) information because Shindo’s solution would

completely destroy the intent of the '650 Patent for subsidiary terminals playing replays or highlights based on having a similar mode information from the main terminal.

90. Similarly, Sasaki discloses a system with a fundamentally different architecture from the '650 Patent. Specifically, Sasaki centers around the delivery of a **segmented/portioned content** to personal device assistant (PDA) devices using a bookmark due PDA's limited device storage capacity. For example, Sasaki teaches dividing content into portions based on the free storage capacity available in a PDA. *See* EX1006, ¶11. Sasaki's system uses a PC home server device that transmits segments of stored content to a PDA upon a request. *See id.*, ¶¶51–52, 54. To achieve the delivery of segmented content to the PDA with limited capacity, Sasaki discloses that the PC home server device stores in memory a previous delimiter information, which identifies the last part of the transmission segmented content to identify the end point of a previous transmission. This information functions essentially as a progress marker—or “bookmark”—to determine the starting position for the next segment that the PDA may request. *See id.*, ¶57. Even Dr. Paradiso agreed that Sasaki's PDA had limited capacity, so they could only show segments or portions using a delimiter:

7	Q. Are the PDAs receiving the Manga,
8	as you place it?
9	A. Yeah, there's Manga. Yeah, if they
10	subscribe to the Manga they will receive a
11	portion of the Manga on their PDA.
12	Q. Okay. Why are they receiving
13	portions of the Manga?
14	A. Sasaki is actually clear of the
15	limitations of the portable devices where the
16	kind of tablet devices that he was using at
17	the time couldn't support an entire volume of
18	Manga and newspapers or something like that,
19	so they would render a page at a time,
20	essentially.
21	Q. You mean portions, correct?
22	A. Yeah, portions that they were able
23	to store and also show.
24	Q. And as you say "store and also
25	show," it shows that the PDAs didn't have the

2	capacity that the main terminal had, correct?
3	A. Sasaki does talk to that.
4	Q. Okay. So how does Sasaki go about
5	solving this problem?
6	A. Sasaki enables different users to
7	request different content or request content
8	from the main device and then scroll through
9	it on their own. So they -- they get a
10	segment, they read it, they get the next
11	segment. Let me use as a whole delimiter
12	data structure to do it that indexes the main
13	media.

EX2016, 115:7–116:13. A POSITA would not equate the '650 Patent's **content-to-device mapping** architecture that uses the claimed association information with a generic distributed system such as Sasaki's **segmented/portioned content delivery system using a bookmark** architecture. *Id.*, ¶95. The '650 Patent's **content-to-device mapping** architecture that uses the claimed association information is a

specific requirement, not a general concept, whereas Sasaki's **segmented/portioned content delivery system using a bookmark** architecture is concerned with managing the limited storage capacity of its receiving PDA through the use of a delimiter position—these are fundamentally different architectures. A POSITA would not be motivated to use or modify Sasaki to arrive at the '650 Patent's **content-to-device mapping** architecture that uses the claimed association information because the goal of the '650 Patent is to deliver specific content to specific subsidiary terminals regardless of their available storage capacity.

91. Furthermore, the '650 Patent is about transmitting digital broadcast wave and/or network content for reception by subsidiary terminals alongside a main terminal using association information. *See* EX1001, 2:3–7. The '650 Patent addresses the pertinent particular problem of delivering content to specific users on individual subsidiary terminals based on association information managed by a main terminal, while the main terminal concurrently displays the content. *See id.*, 3:11–24; *see also id.*, Claims 1 and 4.

92. In contrast, Futa is not seeking to solve the same pertinent particular problem as the '650 Patent. **Instead, Futa addresses the problem of controlling the transmission or authorization of a content using “category information” indicating a category of device for the purposes of copyright protection—**simply put, a **permission/authorization filter** that show if a device is authorized to receive

certain content. *See* EX1009, ¶¶10, 12, 146, 169-171; *see also id.*, Fig. 9 and Claim 1. In addition, while the content distribution system 1 includes a broadcast receiving device 10, TV 20, PC 30, and data-communication controlling device 40, only data-communication controlling device 40 controls the reception and transmission of a single content to TV 20 and PC 30 using this **category information**. *See id.*, Fig. 1; *see also id.*, ¶¶164, 170, 176. Furthermore, **category information is not the claimed “association information”** because it simply serves as permission/authorization filter (*e.g.*, it provides a value of “0,” “1,” or “2”). *See id.*, ¶146. As such, Futa does not address the problem of providing personalized content for specific users based on association information defined between content and device IDs. *See* EX1001, Claims 1 and 4. Instead, Futa simply verifies if a user has a permission to receive certain content.

93. McClellan is not analogous art to either the '650 Patent or Futa. **McClellan is directed to an “improved operating system which accommodates system upgrades in real time” for “set top boxes.”** EX1010, 1:26-29. Its teachings focus on the internal software architecture of a set top box for managing system modules to facilitate updates. *See id.*, 3:60–4:1. While set top boxes are relevant to content delivery, the technical scope of McClellan (software updates) is unrelated to content transmission and delivery using association information. Furthermore, McClellan does not address the same pertinent particular problem as the '650 Patent;

instead, it aims to improve the efficiency of updating set-top box software and hardware.

94. Therefore, a POSITA attempting to solve the problem addressed by the '650 Patent would not have been motivated to combine Futa and McClellan to arrive at the claimed invention. As demonstrated, McClellan is non-analogous art, and neither reference addresses the pertinent particular problem solved by the '650 Patent. **Futa teaches category-based authorization, while McClellan teaches OS modularity for upgrades.** Compare EX1009, ¶¶12 and 251 with EX1010, Abstract and 4:45-46. Combining these disparate teachings would not have logically led a POSITA to arrive at the claimed invention. Even if a POSITA were somehow motivated to combine these references, the resulting system would merely be Futa's authorization system operating on McClellan's upgradeable OS—it would fail to achieve the personalized content-to-device mapping required by the '650 Patent. Even Dr. Paradiso testified that the '650 Patent is not concerned with OS upgrades:

3	Q. To be clear, the '650 patent does
4	not talk about terminals operating system,
5	correct?
6	A. I don't believe it does.

EX2016 at 79:3–6.

95. In light of the glaring deficiencies in Shindo or Sasaki, the knowledge of a POSITA would not fill in any gaps to have any reasonable expectation of success to render obvious Claims 1–4 of the '650 Patent. Similarly, the combination of Futa-

McClellan still fails to disclose or suggest Claims 1–4 of the '650 Patent, nor is the combination providing a reasonable expectation of success.

A. Ground 1: Shindo Does Not Render Claims 1–4 Obvious

96. For Ground 1, neither the Petitioner nor Dr. Paradiso demonstrates that Shindo renders obvious challenged Claims 1–4. Shindo fails to disclose or suggest by a preponderance of the evidence key features of the '650 Patent's invention. My detailed analysis below demonstrates that the Petitioner and Dr. Paradiso's mapping of Shindo to the challenged claims is technically deficient for at least the following reasons. Indeed, Dr. Paradiso testified that Shindo was used for anticipation purposes, and as such the Petition to provide a basis for why certain limitations would not have been obvious in light of Shindo, if not explicitly disclosed.

25	Q. What references are you relying on	
2	for Ground Number 1?	
3	A. Ground 1, I believe, is Shindo.	
4	It's in anticipation.	

EX2016, 79:25–80:4. Dr. Paradiso treats ground 1 as an anticipation ground where he frequently states Shindo discloses, *e.g.*, claim limitation [1i] or [1j], but he never explains how [1i] or [1j] would have been obvious in view of Shindo.

1. A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [1i] of Claim 1.

97. Claim limitation [1i] provides the structural definition of the “association information,” a feature entirely absent from Shindo. This claim

limitation recites “wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [1i] would be obvious in view of Shindo and the knowledge of a POSITA.

98. Shindo discloses or suggest a **trigger information-to-mode** system that is different from the '650 Patent's personalized **content-to-device mapping** architecture. For example, Shindo is primarily concerned with mobile information terminal management 106 responding to an inquiry made by metadata interpretation unit 103 requesting “**the capabilities and connection information**” of the mobile information terminals. *See* EX1004, ¶40. Moreover, according to Fig. 3 in Shindo, the mobile information terminal management 106 inquires whether a mobile information terminal's management information 19 includes the same “**mode information**” as in trigger information 15 for partial program distribution. *See* EX1004, ¶28; *see also id.*, Fig. 7 (showing “Mode information 16”) and Fig. 9 (showing “Mode information 25”). Therefore, stand alone display device 1 is primarily interested in identifying mobile information terminals according to their **capabilities, connections, and mode information**.

99. Petitioner alleges that the claimed “association information” is, collectively, the trigger information 15, the index information 10, and management

information 19. *See* Pet. at 17. Petitioner fails to show how index information 10 is used for any association purposes, let alone the claimed “association information”—it is not. Petitioner has identified metadata interpretation unit 103 extracting and comparing “mode information 16” in trigger information 15 and “mode information 25” in management information 19 for the existence of a corresponding mode (*i.e.*, mode information 16 and 25 being “Replay”). *See* Pet. at 19 (citing to EX1004, ¶¶28, 33). Petitioner’s assertions does not point to the collective use of index information 10, trigger information 15, and management information 19; instead, a comparison is made solely using mode information 16 and mode information 25. *See id.* In contrast, “association information” requires there to be an association that “defines that one of the contents identified by the content information is associated with one of the device specific ID information.” There is no such association between content and device specific ID information defined by trigger information 15, index information 10, and management information 19. Indeed, the fact that the Petition relies on three different types of information to allegedly map to the claimed “association information” plainly demonstrates that the Petitioner tacitly admits that there is no piece of information disclosed in Shindo that defines such an association.

100. Petitioner agrees that Shindo discloses metadata interpretation unit 103 extracting and comparing “mode information 16” in trigger information 15 and “mode information 25” in management information 19 for the existence of a

corresponding mode (i.e., mode information 16 and 25 being “Replay”) for the transmission of rearranged partial program content to mobile information terminal. *See* Pet. at 19–20 (citing to EX1004, ¶¶28, 33–38). However, Petitioner mischaracterizes Shindo’s systems when alleging that an association is performed between program ID 11 in trigger information 15 and terminal ID 1 in management information 19. *See* Pet. at 21. Contrary to Petitioner’s allegations, terminal ID in management information 19 is never referred to in any association functions performed by metadata interpretation unit 103, neither is terminal ID referred to in any linking association functions performed by accumulation video processing unit 104—this is because terminal ID is irrelevant to any association. *See* EX1004, ¶¶28, 33–38; *see also id.*, Fig. 1. Moreover, Petitioner mischaracterizes Shindo when alleging that “[t]he terminal ID 20 is invoked when display device 1 sends content to mobile information terminals A-B in accordance with the mode information associated with the terminal ID,” or “terminal ID 20 is used by display device 1 for identifying the correct playback mode when sending content to the terminal associated with a given terminal ID.” Pet. at 13 (citing to EX1004, ¶40). While mobile information terminal management unit 106 makes an inquiry regarding mobile information terminal A or B, it is only interested in extracting mode information 25 in management information 19 to compare against mode information

16 in trigger information 15—terminal ID 20 is not used for any comparison and has no significance. *See* EX1004, ¶33; *see also id.*, Figs. 1, 7, and 9.

101. Furthermore, Petitioner alleges that the metadata interpretation unit 103 detecting the index information 10 based on specified index ID 17 in trigger information 15 together with accumulation video processing unit 104 rearranging partial program content for transmission to mobile information terminal using linked trigger information 15, index information 10, and partial program content is the claimed “association information.” *See* Pet. at 19–20 (citing to EX1004, ¶¶33–38). Petitioner is forcing the use of different disclosures in Shindo about information that have completely different functions *i.e.*, triggering or indexing—in an attempt to provide conclusory assertions of obviousness.

102. As such, detection of specified index ID 17 in trigger information 15 and rearranging partial program content based on linked index information 10, trigger information 15, and partial program content do not meet the claimed “association information” because—beyond conclusory assertions—the Petition provides no evidence that the collection of disparate pieces of information each having disparate functions in Shindo correspond to the claimed association information whose function—as claimed—is to define an association between “contents identified by the content information” and “device specific ID information.”

103. A POSITA would understand that **Shindo is solely interested in verifying that a match exists** with the mode information in both trigger information 15 and management information 19—not terminal ID—for a blind transmission of replays or highlights once mobile information terminal management unit 106 accepts a connection request. *See* EX1004, ¶¶5–6, 33–38, 40, 42; *see also id.*, Figs 1, 9. A POSITA would not be motivated to utilize terminal ID, owner’s name, and/or the user’s name in management information 19 as the claimed “device specific identification (ID) information.” The terminal ID is incidental in Shindo’s **trigger information-to-mode** system. Similarly, a POSITA would not have any reasonable expectation of success to use management information, index information, and trigger information to arrive at the claimed “association information,” which serves to associate specific content with specific device, because Shindo solely relies on a mode match to broadly transmit replays or highlights to mobile terminal devices, which is very different from “association information.”

104. Further, the Petition fails to disclose or suggest “association information” definition used in the “first controller” even if the Petition alleges that “first controller” stores terminal ID (*i.e.*, a plurality of device specific identification (ID) information) for Claim limitation [1.f] (Pet. at 12), stores content and index information (*i.e.*, “a plurality of content information) for claim limitation [1.g] (Pet. at 14), and stores collectively trigger information, index information, and

management information (*i.e.*, “association information) for claim limitation [1.h] (Pet. at 17). Specifically, the same “first controller” in Claim limitations [1.f], [1.g] and [1.h] is used in Claim limitation [1.i]. Therefore, if Shindo does not disclose or suggest “association information,” then the “first controller” is also not disclosed or suggested. Simply, Shindo’s trigger information, index information, and management information including terminal ID and content are used for a **trigger information-to-mode** system for display of content replays or highlights, which is not the claimed “one of the contents identified by the content information [] associated with one of the device specific ID information.”

105. Petitioner alleges that the claimed “one of the contents” is one or more scenes of content, “content information” is content ID, and “device specific ID information” is terminal ID. *See* Pet. at 20. However, a POSITA would understand that the association information stored in HDD 105 cannot define one or more scenes of content from content ID in program content from management information 19 because the data structure in HDD 105 includes program content, index information 10 (*e.g.*, program ID 11, index ID 12, starttime 13, finishtime 14, and content ID), trigger information 15 (*e.g.*, program ID 11, mode information 16, specified index ID list 17 including index ID 12 or partial program content, totalTime 18, and content ID), and program information—not management information 19 or any data therein. *See* EX1004, ¶¶20, 24, 26–30, 33–38; *see also id.*, Figs. 1, 5–8.

106. Moreover, Claim limitation [1.i] is clear when referring to “one of the contents” because it relies on antecedent basis to refer back to “one of the contents” in claim limitation [1.h], “the contents” in Claim limitations [1.c] and [1.d], and “[a] contents” in the preamble. Since Petitioner alleges that “contents” is program contents, and content is a program in Shindo (*see* Pet. at 17), “one of the contents” is one **concurrently displayed** program content—not an **after the fact** shortened version. Even Dr. Paradiso agrees that “highlights” or “replays” are played after the fact and are portions of the live program content, which are not displayed on a main terminal:

5 Q. So you're saying that Shindo
6 subsidiary devices receive highlights; is
7 that correct?

8 A. They can receive highlights, they
9 can receive replays. There are other modes
10 they can do, but those are two of the main
11 ones. Shindo talks a lot about trying to
12 catch up on a game if you come in late, so
13 highlights can be useful, or if you want to
14 see a replay, it can send a replay off to you
15 too.

11 Q. What's a playback mode?

12 A. As I mentioned there's several of
13 them and I think I do enumerate them
14 somewhere. But two quick examples are
15 highlights. So highlights of the game so
16 far. It's not the whole thing but highlight
17 scenes, and replays.

9 Q. And to be clear, the main display,
10 the stand-alone display device 1 is not
11 showing the same content as the mobile
12 information terminal A, correct?

13 A. That's just showing the game as it
14 goes on in whatever resolution it arrives in,
15 I believe. The mobile terminal is looking at
16 the highlight or the replay or whatever other
17 thing the request is in its own resolution.

17 Q. Okay. So based on you reading
18 paragraph 5, can you explain what is the
19 problem to be solved by Shindo?

20 A. Shindo is saying that it's not
21 possible to view the replays or highlights of
22 the program on another device, so this way
23 you can watch it on another device.

19 Q. So to be clear, a replay is a
20 segment of -- of the -- let's see. It's a
21 segment of what is received to the subsidiary
22 terminal, correct?

23 A. It appears to be A segment to the
24 video that is sent.

25 Q. Okay. Can you turn to paragraph 13

18 Q. So around 2005 or 2006 was it
19 possible for a replay to occur concurrently
20 with a program that is broadcasted live or in
21 real time?

22 A. What do you mean "concurrently"?

23 Q. At the same time.

24 A. Well, the replay is never really at
25 the same time 'cause it's a replay, right?

12 Q. Isn't it true that a highlight is
13 not a program being broadcasted live?

14 A. No, it's not. It may have been

5	Q. So a part of an -- a part means a
6	portion of the whole, correct?
7	A. Yes. It's taking a part of it or
8	it could be something that could be different
9	as well, 'cause there are other kinds of data
10	that Shindo talks about, program guides, I
11	think he talks about stats. But in this case
12	you're looking at it replays or highlights.

EX2016, 82:5–15, 84:11–17, 95:9–17, 96:17–23, 97:19–24, 98:18–25, and 99:12–14, 102:5–12. Therefore, Petitioner has failed to disclose or suggest that mobile terminal A or B receive one of the program content, as required by the claimed “one of the contents” in Claim limitation [1.h], which is also “associated with one of the device specific identification (ID) information” in Claim limitation [1.i]. For example, mobile information terminal A or B do not receive one of the program contents; instead, it receives rearranged **after the fact partial** program content or reconstructed program content (*i.e.*, replays or highlights being **portions** from one program content), which is not **one concurrently displayed** program content being the claimed “one of the contents.” *See* EX1004, ¶¶20, 28, 33–37. Petitioner agrees that the claimed “contents” are program contents; therefore, “one of the contents” is not one or more **after the fact** scenes of content (*i.e.*, replays or highlights), but it is a **concurrently displayed** program content—one out of many program contents. *See* Pet. at 17. Petitioner appears to construe “one of the contents” as a portion of the content (*see* Pet. at 17), but they have provided no support for their proposed construction of the claimed “one of the contents.”

107. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1i] would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

2. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [1j] of Claim 1.*

108. Claim limitation [1j] recites “wherein the plurality of subsidiary terminals comprise: a second display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [1j] would be obvious in view of Shindo and the knowledge of a POSITA.

109. Petitioner has not demonstrated how the second display in the mobile information terminal A or B displaying **after-the-fact** reconstructed program content meets the claimed “displaying **the** content.” See Pet. at 22. There is no explanation provided by Petitioner on how the reconstructed program content correspond to **the** program content identified in the Petition for claim limitation [1d]. Instead, in claim limitation [1j], Petitioner points to snippets (*e.g.*, starttime and finishtime) of the program content as replays or highlights (*e.g.*, specific scenes of a program), which are described as “rearranged,” “partial,” or “reconstructed” by Shindo. See EX1004, ¶¶21–22, 26, 28, 34, 37. There is no analysis provided on how “plurality of subsidiary terminals [of Shindo]” include “a second display displaying **the** content” that Petitioner identifies as program content displayed on display unit 107 of stand alone display device 1.

110. For example, Shindo discloses that a reception unit receives program content currently being broadcast together with trigger information for special playback of the program content using mode information. *See* EX1004, ¶¶6–7. An accumulation image processing unit, then, extracts part of the accumulated program content using the mode information from trigger information and outputs a reconstructed program content. *See id.* Similarly, Shindo discloses that trigger information 15, index information 10, and partial program content linked to the index information 10 are used as inputs to metadata interpretation unit. *See* EX1004, ¶34. Then, accumulation video processing unit 104 rearranges the partial content based on contents of trigger information 15 to send to as reconstructed program content to mobile information terminal A or B. *See id.* Moreover, the reconstructed program content can be a plurality of replays from different program contents that are rearranged as reconstructed program content for transmission to mobile information terminal A or B. *See* EX1004, ¶37 and Fig. 4.

111. As such, the program content displayed on display unit 107 of stand alone device 1 is **not the same** as time snippets, replays or highlights displayed of the program content on display unit 109 of mobile information terminal A or B. Either a portion of the program content or an amalgamation of highlights from different program contents (*i.e.*, reconstructed program content) is displayed on display unit 109, which is **not one of the contents** displayed on display unit 107.

The claimed “displaying **the** content” is first introduced in claim limitation [1h] (*i.e.*, “one of the contents”), and the claimed “contents” is stored on the main terminal and displayed on the “first display,” as required by claim limitations [1c] and [1d], respectively. Therefore, “the content” displayed on the “second display” is the **same** as what is displayed on the first display.

112. Petitioner, instead, points to different pieces of content, *i.e.*, program content in [1d] and snippets in [1j], without ever addressing the antecedent basis in claim 1. *See* Pet. at 21–22 (citing to EX1002, ¶¶84–85); *see also* EX1004, ¶¶5–8. Thus, Petitioner fails to show that mobile information terminal A or B displays the program content displayed on stand alone display device 1, as required by the claimed “content” of claim 1. A POSITA would not be motivated to use Shindo’s reconstructed program content displayed on mobile information terminal A or B since it is not the entire and same program content shown on stand alone display device 1, as required by claim limitation [1j]. Furthermore, to the extent Petitioner argues that **an after the fact** “highlight” or “replay” of a file can be considered “the content,” a POSITA would understand that this limitation is not merely governed by file size or completeness, but by the integrity of the system’s routing logic. In the ’650 Patent, the main terminal receives a plurality of contents, separates them, and the subsidiary terminal displays “the content” because that, specific, discrete data stream was explicitly mapped and routed to that specific device using the claimed

“association information.” In contrast, Shindo relies on generic broadcast triggers. Because this alleged prior art system does not rely on the claimed personalized content-to-device mapping architecture to route received data, it does not disclose a subsidiary terminal displaying a routed “one of the contents.”

113. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1j] would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

3. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [1k] of Claim 1.*

114. Claim limitation [1k] recites “[wherein the plurality of subsidiary terminals comprise: . . .] a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information . . . and transmitting the device specific ID information to the main terminal when connecting to the main terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [1k] would be obvious in view of Shindo and the knowledge of a POSITA.

115. Petitioner alleges that collectively reception unit 108 and instruction unit 111 as second controller control transmission/reception with the main terminal even though Shindo is completely silent as to the presence of a “controller.” *See* Pet. at 23. Specifically, Petitioner alleges that reception unit 108 controls the reception of information from stand alone display device 1. *See id.* at 23–24 (citing to EX1004,

¶¶20, 42); *see also id.*, Fig. 1. However, contrary to instruction unit 111 sending a connection request—indicative of control—to mobile information terminal management unit 106 in stand alone display device 1 to connect and only send management information 19, reception unit 108 makes no such control of reception. *See* EX1004, ¶¶42, 45; *see also id.*, Fig. 1. This is because Shindo only discloses that it receives the input of the reconstructed program content from the accumulation video processing unit 104. *See id.* It is, rather, accumulation video processing unit 104 that controls the reception of partial program content to reception unit 108. *See id.*, ¶¶34, 37, 40, 42; *see also id.*, Fig. 1.

116. A POSITA would not be motivated to recognize the collective reception unit 108 and instruction unit 111 as the claimed second controller because the stand alone display device 1 controls transmission via accumulation video processing unit 104 to mobile information terminal A or B—reception unit 108 does not control any reception. A POSITA would not be motivated to modify Shindo's **trigger information-to-mode** system to arrive at this claim limitation because stand alone display device 1 controls the blind transmits replays or highlights to multiple mobile terminals matching mode information—not the controller in the mobile terminals. A POSITA looking at Fig. 1 of Shindo would be deterred from changing components or swapping functionalities to successfully arrive at the claimed limitation [1k] because it would defeat the purpose of Shindo's **trigger**

information-to-mode system blindly transmitting replays or highlights to mobile terminals matching mode information. As such, Petitioner fails to disclose or suggest that the collective reception unit 108 and instruction unit 111 control reception with stand alone display device 1.

117. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1k] would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

4. *A POSITA Would Not Have Found Shindo to Render Obvious Claim 2.*

118. Claim 2 recites: “[t]he contents reproducing system according to claim 1, wherein the main terminal includes a converter down-converting the content and transmits the down-converted content to the subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that Claim 2 would be obvious in view of Shindo and the knowledge of a POSITA.

119. Because Claim 2 depends from Claim 1, it includes all of the limitations that Shindo fails to teach, as detailed *supra* § IX.A.1–3 (claim limitations [1i], [1j], and [1k]). Petitioner’s argument for claim 2 fails for at least these same reasons. Petitioner’s arguments regarding the additional limitation of a “converter down-converting the content” cannot cure the fundamental deficiencies in Shindo.

120. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 2 would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

5. *A POSITA Would Not Have Found Shindo to Render Obvious Claim 3.*

121. Claim 3 recites: “[t]he contents reproducing system according to claim 1, wherein the main terminal includes a network interface and acquires the content from an external server via the network interface.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that Claim 3 would be obvious in view of Shindo and the knowledge of a POSITA.

122. Because Claim 3 depends from Claim 1, it includes all of the limitations that Shindo fails to teach, as detailed *supra* §VI.A.1–3 (claim limitations [1i], [1j], and [1k]). Petitioner’s argument for Claim 3 fails for at least these same reasons. Petitioner’s arguments regarding the additional limitation of a “network interface” does not cure the fundamental deficiencies in Shindo.

123. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 3 would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

6. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4j] of Claim 4.*

124. Claim limitation [4j] recites “wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4j] would be obvious in view of Shindo and the knowledge of a POSITA.

125. For, at least, the same reasons provided in *supra* §IX.A.1 (claim limitation [1i]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4j] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. A POSITA would understand that Shindo’s system is primarily interested in verifying a match between mode information in trigger information 15 and management information 19, which have nothing to do with terminal ID of mobile information terminal A and B. Moreover, the claimed “first content” or “the second content” is not partial program content or reconstructed program content because “contents” displayed on stand alone display device 1 is a plurality of program content.

7. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4k] of Claim 4.*

126. Claim limitation [4k] recites “wherein the first subsidiary terminal comprises: a second display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4k] would be obvious in view of Shindo and the knowledge of a POSITA.

127. For, at least, the same reasons provided in *supra* §IX.A.2 (claim limitation [1j]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4k] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. A POSITA would understand that the program content displayed on stand alone device 1 is not the same as snippets, replays, or highlights of program content shown on mobile information terminal A or B; as such, mobile information terminal A or B including display unit 109 cannot be the claimed “first subsidiary terminal” or “second display.”

8. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4l] of Claim 4.*

128. Claim limitation [4l] recites “[wherein the first subsidiary terminal comprises . . .] a second controller controlling transmission/reception with the main terminal, the second controller storing the first device specific ID information . . . and transmitting . . . to the main terminal when connecting to the main terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that

claim limitation [4l] would be obvious in view of Shindo and the knowledge of a POSITA.

129. For, at least, the same reasons provided in *supra* §IX.A.3 (claim limitation [1k]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4l] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. A POSITA would understand that the claimed “second controller” is not Shindo’s collective reception unit 108 and instruction unit 111.

9. *A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4m] of Claim 4.*

130. Claim limitation [4m] recites “wherein the second subsidiary terminal comprises: a third display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4m] would be obvious in view of Shindo and the knowledge of a POSITA.

131. For, at least, the same reasons provided in *supra* §IX.A.2 (claim limitation [1j]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4m] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. A POSITA would understand that the program content displayed on stand alone device 1 is not the same as snippets, replays, or highlights of program content shown on mobile information terminal A or B; as such, mobile information terminal A or B including display unit 109 cannot be the claimed “second subsidiary terminal” or “third display.”

10. A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4n] of Claim 4.

132. Claim limitation [4n] recites “[wherein the second subsidiary terminal comprises . . .] a third controller controlling transmission/reception with the main terminal, the third controller storing the second device specific ID information . . . and transmitting . . . to the main terminal when connecting to the main terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4n] would be obvious in view of Shindo and the knowledge of a POSITA.

133. For, at least, the same reasons provided in *supra* §IX.A.3 (claim limitation [1k]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4n] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. A POSITA would understand that the claimed “third controller” is not Shindo’s collective reception unit 108 and instruction unit 111.

11. A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4o] of Claim 4.

134. Claim limitation [4o] recites “when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific device ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” In my

opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4o] would be obvious in view of Shindo and the knowledge of a POSITA.

135. Shindo discloses or suggests a **trigger information-to-mode** system where replays or highlights are blindly sent to multiple mobile terminals according to a matching mode—not terminal ID. *See* EX1004, ¶¶5–6, 33–38, 40, 42; *see also id.*, Figs 1, 9. This is not the specific one to one mapping disclosed in this claim limitation “the first device specific ID information and the second content is associated with the second device specific device ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” None of Petitions’ citations address how the deficiencies in Shindo in view of the knowledge of a POSITA would render obvious this claim limitation. *See* EX1002, ¶119. A POSITA would understand that Shindo fails to render obvious the claimed “association information” because Shindo’s terminal ID is not used for any comparison; therefore, it fails to meet the claimed “first device specific ID information” and “second device specific ID information.” Additionally, the claimed “first content” and “second content” cannot be a reconstructed program content or partial program content (*i.e.*, replays or highlights of the program content).

136. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [4o] would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

12. A POSITA Would Not Have Found Shindo to Render Obvious Claim Limitation [4p] of Claim 4.

137. Claim limitation [4p] recites “when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific device ID information, the main terminal transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence that claim limitation [4p] would be obvious in view of Shindo and the knowledge of a POSITA.

138. For, at least, the same reasons provided in *supra* §IX.A.11 (claim limitation [4o]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4p] would have been rendered obvious in view of Shindo and the knowledge of a POSITA. More specifically, Shindo’s **trigger information-to-mode** system fundamentally lacks the dynamic, concurrent routing matrix required by this claim limitation. Claim Limitation [4p] mandates an architecture capable of dynamically reversing its routing, directing “the second content is associated with the first device specific (ID) information” and “the first content is associated with the second device specific (ID) information” based on stored association

information. Shindo cannot achieve this because it relies on broadcasting identical highlights to all devices sharing a viewing mode. A POSITA would recognize that a broadcast architecture is technically incapable of executing the centralized, dynamic cross-routing of discrete contents to specific devices as required by this claim limitation. Furthermore, Shindo fails to render obvious the claimed “association information” because Shindo’s terminal ID is not used for any comparison; therefore, it fails to meet the claimed “first device specific ID information” or “second device specific ID information.” Additionally, the claimed “first content” and “second content” cannot be a reconstructed program content or partial program content (*i.e.*, replays or highlights of the program content).

139. Furthermore, Petitioner relies on Shindo’s disclosure of multiple terminals watching the same broadcast meeting claim limitation [4p]. *See* Pet. at 36–37 (citing EX1002, ¶120). However, Shindo only discloses that mobile information terminal A receives, e.g., part of baseball broadcast. *See* EX1004, ¶49. Separately, Shindo discloses that mobile information terminal B receives highlights of a broadcast as a replay. *See id.*, ¶50. Petitioner has not specifically explained how the claimed “association information” defining that “the second content” is associated with the “first device specific ID information” or that “the first content” is associated with the “second device specific ID information.”

140. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [4p] would have been rendered obvious in view of Shindo and the knowledge of a POSITA.

B. Ground 2: Sasaki Does Not Render Claims 1–4 Obvious

141. For Ground 2, neither the Petitioner nor Dr. Paradiso demonstrate that Sasaki renders obvious challenged Claims 1–4. Sasaki fails to disclose or suggest by a preponderance of the evidence key features of the '650 Patent's invention. I provide detail analysis below showing that the Petitioner and Dr. Paradiso's mapping of Sasaki to the challenged claims fails at least for the following reasons.

1. A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [1h] of Claim 1.

142. Claim limitation [1h] recites that the first controller is configured to “store association information for transmitting one of the contents to one of the subsidiary terminals.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

143. As an initial matter, while there is disclosure of a “display controller” in Sasaki, Petitioner does not point to any evidence of a **controller** that is configured to store association information.

144. Petitioner alleges that the claimed “association information” is delimiter information, and “one of the contents” is lines of an electronic newspaper. *See id.* at 46. Sasaki discloses or suggest a **segmented/portioned content delivery**

system using a bookmark due to a PDA limited storage capacity; this is not a persistent **content-to-device mapping** architecture. For example, Sasaki discloses that PDA 2 does not have the same memory capacity as PC home server device 1; therefore, only **segments** (*e.g.*, article, paragraphs, chapters) of the electronic newspaper are transmitted to PDA 2. *See* EX1006, ¶71 (emphasis added). Specifically, CPU 101 refers to the display information from the PDA 2 to match its capabilities, and CPU 101 calculates and generates the **content segment** such that the free memory capacity of PDA 2 is not exceeded. *See id.*, ¶132 (emphasis added). The **last part of the content segment** that has been transmitted (*e.g.*, paragraph, chapter, article, or one to several lines) is recorded as “previous delimiter information”. *See id.*, ¶139. While the PDA 2 provides PC home server device 1 content ID, terminal ID, its free memory capacity at the time of request, and display information, these parameters are used merely to facilitate the transfer of a specific segment. Critically, **none of this information functions as the “association information” claimed in the ’650 Patent**. In Sasaki, the **delimiter information is determined solely by the physical end-point of the previous transmission—**essentially a “bookmark” indicating where the process left off at the previous transmission. It does not define a mapping between a specific content and a specific device ID to enable personalized content distribution; rather, it is a technical marker used to manage the storage constraints of the PDA. *See id.*, ¶104.

145. A POSITA would not be motivated to modify Sasaki to arrive at the claimed “association information” because a delimiter position or bookmark is used to transmit portions of the content PDA 2. Indeed, a POSITA would not recognize that Sasaki’s **segmented/portioned content delivery system using a bookmark** to be analogous or solving the same problem as the **content-to-device mapping** architecture in the ’650 Patent because delimiter information or delimiter position is simply used to resume or progress at a specific point for segmented content—the focus is not about transmitting “one of the contents” to PDA 2 based on the delimiter information.

146. Petitioner alleges that the claimed “the contents” is electronic newspapers. *See* Pet. at 40. In addition, Petitioner alleges that the claimed “plurality of content information” is content identification information. *See id.* at 45. Moreover, Petitioner alleges that “one of the contents” is lines of an electronic newspaper, the last paragraph, chapter, or last few lines of transmission information segment (*i.e.*, portions of the content). *See id.* Sasaki discloses or suggests that content segment (*i.e.*, portions of the content or content part) is stored in data memory 214 of PDA 2, and when the user requests the continuation of the previously requested content segment, data memory 214 is erased so that PDA 2 frees up memory capacity for PC home server device 1 to send the next content segment (*e.g.*, one or several lines of information) according to a new content distribution request.

See EX1006, ¶¶101–104. As such, PDA 2 does not receive electronic newspaper in PC home server device 1 since it, instead, receives segments of the electronic newspaper after which the segments are erased to accept a new segment according to the display and memory capacity of PDA 2. See EX2016, 115:7–116:13. However, portions of content do not render obvious the required “one of the contents” displayed on PDA 2 because the same entire electronic newspaper as PC home server device 1 is required to be displayed on PDA 2, and a POSITA would not have found it obvious to use Sasaki’s **segmented/portioned content delivery system using a bookmark** due to PDA 2 limited storage capacity. Petitioner agrees that “the contents” is electronic newspapers; therefore, “one of the contents” is not lines, paragraph, or chapter of the electronic newspaper, but it is an **entire** electronic newspaper—one of out of many electronic newspapers. See Pet. at 40 and 46. A POSITA would not have found it obvious to use Sasaki’s **segmented/portioned content delivery system using a bookmark** to display the entire electronic newspaper because of the limited capacity of PDA 2.

147. Petitioner appears to construe “one of the contents” as a portion of the content (see Pet. at 46), but Petitioner provides no support for their proposed construction of the claimed “one of the content.” See *id.* Claim limitation [1h] is clear when referring to “one of the contents” because it relies on antecedent basis to refer back to “the contents” in claim limitations [1c] and [1d] and “[a] contents” in

the preamble. Since Petitioner alleges that “contents” is electronic newspapers, and content is lines of an electronic newspaper in Sasaki (*see* Pet. at 40 and 46), “one of the contents” is one electronic newspaper in its entirety—not a shortened version. Petitioner has failed to show that PDA 2 receives one of the electronic newspaper, as required by the claimed “one of the contents.” Since the claimed “association information” requires the transmission of one of the contents being one electronic newspaper, delimiter information cannot be an “association information” because it is only used to transmit a segment of the content (*e.g.*, lines of an electronic newspaper). *See* Pet. at 72 (citing EX1006, ¶¶57, 72, 78). It would not have been obvious to a POSITA to use delimiter information as association information in view of the storage capacity restriction in PDA 2.

148. A POSITA would not have found it obvious that segments of the electronic newspaper in Sasaki are the claimed “one of the contents” since a segment falls short of the entire electronic newspaper, and the memory constraints of the Sasaki system would not allow for storage of the entire electronic newspaper. A POSITA would not be motivated to increase the storage capacity in PDA 2 to arrive at the claimed limitation because portions of the content would still be displayed on PDA 2. Moreover, a POSITA would not find it obvious to use delimiter information as the claimed “association information” because it is only a bookmark pointing to

a segment of the electronic newspaper, and it has nothing to do with an association map of specific content with certain PDA 2.

149. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1h] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

2. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [1i] of Claim 1.*

150. Claim limitation [1i] recites “wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

151. As an initial matter, for the same reasons provided in *supra* §IX.B.1, Petitioner fails to establish the claimed “association information.” Indeed, Petitioner has provided no explanation how “portion of content” meets the claimed “one of the contents.” *See* Pet. at 48. In addition, delimiter information is just a bookmark for identifying the last part of the transmission information segment (*i.e.*, the last lines of the newspaper). *See* EX1006, ¶¶57, 72. In addition, Petitioner does not point to a **controller** that is configured to store association information.

152. The Petition is incorrect in attempting to equate Sasaki’s “delimiter information” with the claimed “association information.” While I acknowledge that

Sasaki's PC home server device 1 utilizes distribution request source information to identify the terminal and determine which content is being requested (See EX1006, ¶129), this session-management step is fundamentally different from the '650 Patent's routing architecture. In Sasaki, the delimiter information itself contains no mapping data; the server does not extract content identification or terminal identification from the delimiter. Instead, the delimiter is strictly a memory-management tool. *See* EX1006, ¶129

153. For example, Petitioner alleges that the claimed "one of the contents" is a portion of electronic newspaper or book, "content information" is content identification information, and "device specific ID information" is device-specific terminal identification information. *See* Pet. at 48. This claim limitation, however, specifically requires that "the association information defines that one of the contents . . . is associated with one of the device specific ID information." Sasaki's delimiter information fails to define this link. Because the delimiter merely provides a physical position (i.e., a bookmark) for resuming transmission of subsequent lines of a newspaper, it does not define a one-to-one mapping between a specific content and a specific device ID. *See* EX1006, ¶57. In other words, Sasaki uses the delimiter solely to determine where in a file to resume a transmission for a given session, not which content is mapped to which device. *See id* Therefore, a POSITA would not

find that Sasaki's delimiter information satisfies the claimed association information. *See id.*

154. Sasaki is focused on portion of content resumption due to the limited storage capacity of the PDA 2. *See* EX1006, ¶¶101–104. Sasaki's system is designed to solve the problem of distributing large files to devices with limited memory. *See id.* The PC home server device 1 sends a chunk of data, and the delimiter marks where it left off. *See* EX1006, ¶¶71–74, 124–139. This is functionally different from the claimed "association information," which defines a persistent link between a content and a device specific ID information for the purpose of determining a destination for content. A POSITA would not be motivated to increase Sasaki's PDA storage to display the complete contents of the newspaper because it would completely eviscerate Sasaki's goal for **segmented/portioned content delivery system using a bookmark** due to the limited storage capacity of PDA 2. Further, a POSITA would not find it obvious to use Sasaki's delimiter as association information because it has a limited functionality incapable of achieving the claimed "association information."

155. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1i] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

3. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [1j] of Claim 1.*

156. Claim limitation [1j] recites “wherein the plurality of subsidiary terminals comprise: a second display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

157. All Petitioner has done is identify display 205. Pet. at 49. Petitioner has not demonstrated how display 205 in the PDA 2 displays “the content,” which cannot be a segment of the content. *See id.* In fact, Petitioner is silent regarding what is the content even though Petitioner previously defined it as portion of content or segmented content. *See* Pet. at 49–50; *see also id.* at 48. There is no explanation provided by Petitioner on how portions of or segmented content correspond to electronic newspaper identified in claim limitation [1d], let alone how the segmented electronic newspaper on display 205 is the same as what is displayed as one of the electronic newspapers on PC home server device 1. Instead, in claim limitation [1j], Petitioner points to segmented content being displayed on display 205. There is no analysis provided on how “plurality of subsidiary terminals [of Sasaki]” include “a second display displaying **the** content.”

158. The claimed “displaying **the** content” is first introduced in claim limitation [1h] (*i.e.*, “one of the contents”), and the claimed “contents” is stored on the main terminal and displayed on the “first display,” as required by claim

limitations [1c] and [1d], respectively. Therefore, “the content” displayed on the “second display” is the **same** as what is displayed on the first display. The antecedent basis simply requires that the second display of the subsidiary terminals displays **the** content that is displayed on the main terminal. “[T]he content” (*i.e.*, electronic newspaper in PC) is not being displayed on display 205. A POSITA would not be motivated to display the entire newspaper on PDA 2 to arrive at the claimed limitation of “the content” because of the limited storage capacity of PDA 2. A POSITA would not find it obvious to display portions of the content on display 205 to arrive at the claimed “a second display displaying the content” because Sasaki’s segmented electronic newspaper is not the entire and same electronic newspaper shown on PC home server device 1, as required by claim limitation [1j]. Furthermore, to the extent Petitioner argues that a “portion” of a file can be considered “the content,” a POSITA would understand that this limitation is not merely governed by file size or completeness, but by the integrity of the system’s routing logic. In the ’650 Patent, the main terminal receives a plurality of contents, separates them, and the subsidiary terminal displays “the content” because that, specific, discrete data stream was explicitly mapped and routed to that specific device using the claimed “association information.” In contrast, Sasaki relies on sequential chunks of ongoing file transfers. Because this alleged prior art system does not rely on the claimed personalized content-to-device mapping architecture to

route received data, it does not disclose a subsidiary terminal displaying a routed “one of the contents.”

159. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [1j] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

4. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [1l] of Claim 1.*

160. Claim limitation [1l] recites “wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal . . . and transmits the content . . . based on the association information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

161. For the same reasons provided *supra* §IX.B.1–3 (claim limitations [1h], [1i], and [1j]), Petitioner fails to establish claim limitation [1l] because no association information is disclosed or suggested. Therefore, Sasaki’s PC home server device 1 cannot perform the function required by claim limitation [1l], which is to determine a connection with PDA 2 and transmit a portion of or segmented content based on Petitioner’s non-existent association information because the delimiter information does not associate the device-specific terminal identification information with the portion of or segmented content. A POSITA would not find it obvious to use Sasaki’s system to arrive at claim limitation [1l] because delimiter

information (as explained earlier) is not the claimed “association information,” as delimiter position is not terminal ID.

162. Even if “‘the content’ can refer to both ‘the contents’ . . . or ‘one of the contents’” according to Dr. Paradiso (*see* EX1002, p. 81 n.2), Sasaki would still not render obvious the claimed “contents” because PDA 2’s limited storage capacity can only display segments of electronic newspaper—not an entire newspapers.

163. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [11] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

5. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim 2.*

164. Claim 2 recites: “[t]he contents reproducing system according to claim 1, wherein the main terminal includes a converter down-converting the content and transmits the down-converted content to the subsidiary terminal.” In my opinion, Petitioner fails by a preponderance of the evidence to establish this limitation in view of Sasaki and the knowledge of a POSITA.

165. Because Claim 2 depends from Claim 1, it includes all of the limitations that Sasaki fails to teach, as detailed *supra* §IX.B.1–5 (claim limitations [1h], [1i], [1j], and [11]). Petitioner’s argument for Claim 2 fails for at least these same reasons. Petitioner’s arguments regarding the additional limitation of a “converter down-converting the content” cannot cure the fundamental deficiencies in Sasaki.

166. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 2 would have been rendered obvious by Sasaki and the knowledge of a POSITA.

6. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim 3.*

167. Claim 3 recites: “[t]he contents reproducing system according to claim 1, wherein the main terminal includes a network interface and acquires the content from an external server via the network interface.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

168. Because Claim 3 depends from Claim 1, it includes all of the limitations that Sasaki fails to teach, as detailed *supra* §IX.B.1–4 (claim limitations [1h], [1i], [1j], and [1l]). Petitioner’s argument for Claim 3 fails for at least these same reasons. Petitioner’s arguments regarding the additional limitation of a “network interface” do not cure the fundamental deficiencies in Sasaki.

169. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 3 would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

7. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4i] of Claim 4.*

170. Claim limitation [4i] recites “[wherein the first controller is configured to . . .] store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

171. For, at least, the same reasons provided in *supra* §IX.B.1 (claim limitation [1h]), Petitioner fails to show that claim limitation [4h] is obvious in view of Sasaki. Furthermore, Claim limitation [4i] is clear when referring to “one of the first content or second content” because it refers back to “the contents” in claim limitations [4d] and [4e] and “[a] contents” in the preamble. Petitioner’s segmented content is not the claimed “one of the first content or second content.” A POSITA would not be motivated to use segments of the electronic newspaper in Sasaki to render obvious the claimed “one of the first content or second content” as it falls short of the entire electronic newspaper. Furthermore, a POSITA would not find any expectation of success to use delimiter information as the claimed “association information” because it is only a bookmark pointing to a segment of the electronic newspaper and has nothing to do with an association map with PDA 2.

8. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4j] of Claim 4.*

172. Claim limitation [4j] recites “wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

173. For, at least, the same reasons provided in *supra* §IX.B.2 (claim limitation [1i]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4j] would have been rendered obvious in view of Sasaki. A POSITA would not be motivated to use Sasaki’s system because of the limited storage of PDA 2 preventing the display of the one of the same electronic newspaper displayed on PC home server device 1. Moreover, a POSITA would not find any likelihood of success when using Sasaki’s delimiter, which has limited functionality incapable of achieving the claimed “association information.”

9. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4k] of Claim 4.*

174. Claim limitation [4k] recites “wherein the first subsidiary terminal comprises: a second display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

175. For, at least, the same reasons provided in *supra* §IX.B.3 (claim limitation [1j]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4k] would have been rendered obvious in view of Sasaki. A POSITA would understand that the electronic newspaper displayed on PC home server device 1 is not the same as segmented content shown on PDA 2; as such, PDA 2 and its display cannot be the claimed “first subsidiary terminal” or “second display.”

10. A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4m] of Claim 4.

176. Claim limitation [4m] recites “wherein the second subsidiary terminal comprises: a third display displaying the content.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

177. For, at least, the same reasons provided in *supra* §IX.B.3 (claim limitation [1j]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4m] would have been rendered obvious in view of Sasaki. A POSITA would understand that the electronic newspaper displayed on PC home server device 1 is not the same as segmented content shown on PDA 2; as such, PDA 2 and its display cannot be the claimed “second subsidiary terminal” or “third display.”

11. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4o] of Claim 4.*

178. Claim limitations [4o] recites “when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific device ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

179. For, at least, the same reasons provided in *supra* §IX.B.4 (claim limitation [11]), Petitioner fails to show by a preponderance of the evidence that claim limitations [4o] would have been rendered obvious in view of Sasaki. A POSITA would understand that Sasaki’s PC home server device 1 cannot perform the function required by claim limitation [4o] because Sasaki’s system only determines a connection with PDA 2 to transmit a portion or segmented content based on a non-existent association information.

180. Sasaki discloses or suggests a **segmented/portioned content delivery system using a bookmark** to identify the last position of portioned content—not terminal ID. *See* EX1006, ¶¶57, 72. This is not the specific one to one mapping disclosed in this claim limitation “the first device specific ID information and the second content is associated with the second device specific device ID information,

the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” None of the Petition’s citations address how the deficiencies in Shindo in view of the knowledge of a POSITA would render obvious this claim limitation. *See* Pet. at 62. A POSITA would understand that Sasaki fails to render obvious the claimed “association information” because Sasaki’s terminal ID is not used for any comparison; therefore, it fails to render obvious the claimed “first device specific ID information” and “second device specific ID information.” Additionally, the claimed “first content” and “second content” cannot be a portion of the content (*i.e.*, line or lines of an electronic newspaper). A POSITA understand that the delimiter information does not render obvious or associate the claimed “first device specific ID information” (*e.g.*, device-specific terminal identification information) with “the first content” (*e.g.*, portion or segmented content). The same is true for “second device specific ID information” (*e.g.*, device-specific terminal identification information) with “the second content” (*e.g.*, portion or segmented content).

181. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [4o] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

12. *A POSITA Would Not Have Found Sasaki to Render Obvious Claim Limitation [4p] of Claim 4.*

182. Claim limitations [4p] recites “when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific device ID information, the main terminal transmits the second content to the first subsidiary terminal and transmits the first content to the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation in view of Sasaki and the knowledge of a POSITA.

183. For, at least, the same reasons provided in *supra* §IX.B.5 (claim limitation [11]) and *supra* §IX.B.11 (claim limitation [4o]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4p] would have been rendered obvious in view of Sasaki. More specifically, Sasaki’s **segmented/portioned content delivery system** fundamentally lacks the dynamic, concurrent routing matrix required by this limitation. Claim limitation [4p] mandates an architecture capable of dynamically reversing its routing, directing the “second content” to the “first subsidiary terminal” and “the first content” to the “second subsidiary terminal” based on the stored association information. Sasaki cannot achieve this because its system acts as a sequential server, answering individual PDA memory requests one at a time using byte-offset bookmarks. A POSITA would recognize that managing sequential file transfers to handle local storage limits is

technically distinct from, and incapable of, executing the dynamic cross-routing of multiple contents to multiple devices. Additionally, the claimed “first content” and “second content” cannot be a portion of the content (*i.e.*, line or lines of an electronic newspaper). A POSITA would understand that Sasaki’s PC home server device 1 cannot perform the function required by claim limitation [4p] because Sasaki’s system only determines a connection with PDA 2 to transmit a portion or segmented content based on a non-existent association information. A POSITA understand that the delimiter information does not associate the claimed “first device specific ID information” (*e.g.*, device-specific terminal identification information) with “the second content” (*e.g.*, portion or segmented content). The same is true for “second device specific ID information” (*e.g.*, device-specific terminal identification information) with “the first content” (*e.g.*, portion or segmented content).

184. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that claim limitation [4p] would have been rendered obvious in view of Sasaki and the knowledge of a POSITA.

C. Ground 3: Futa in view of McClellan Does Not Render Claims 1–4 Obvious

185. For Ground 3, neither the Petitioner nor Dr. Paradiso demonstrate that Futa alone anticipates challenged claims 1–4. In an attempt to fill in the gaps of the deficiencies of Futa, Petitioner and Dr. Paradiso have failed to show by a preponderance of the evidence both that a POSITA would be motivated to combine

Futa and McClellan and, even if the two references are combined, that the combination of Futa and McClelland discloses or suggest each element of challenged claims 1–4.

1. A POSITA Would Not Be Motivated To Combine Futa and McClellan.

186. Petitioner fails to show that a POSITA seeking to use association information to transmit content, as claimed in the '650 Patent, would have been motivated to combine Futa with McClellan. Pet. 64–65. As detailed *supra* §IX and below, such a combination still fails to disclose or suggest by a preponderance of the evidence the key limitations of the challenged claims.

2. A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [1h] of Claim 1

187. Claim limitation [1h] recites that the first controller is configured to “store association information for transmitting one of the contents to one of the subsidiary terminals.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

188. Petitioner alleges that Futa’s “judgment tables” constitute the claimed “association information.” *See* Pet. at 73. Futa discloses storing judgment tables A430 and B440 within the communication controlling unit 407. *See* EX1009, ¶169; *see also id.*, Figs. 8A and 8B.

FIG.8A

FREE CONTENT
ADDITIONAL INFORMATION = 1

JUDGMENT
TABLE A430

1	PERMITTED DEVICE ID
	IDA
	IDB
	IDC

FIG.8B

HIGH-VALUE CONTENT
ADDITIONAL INFORMATION = 2

JUDGMENT
TABLE B440

2	PERMITTED DEVICE ID
	IDA
	IDC

Reproduction of Figs. 8A & 8B of Futa

189. These tables, however, store authorization rules, mapping, e.g., content categories (represented by “additional information” values 1 or 2) to lists of device IDs belonging to categories permitted to receive that type of content—essentially a permission filter. *See id.*, ¶172. For example, table B440 indicates devices IDA and IDC are permitted to receive high-value content via additional information “2” (e.g., high-value content). *See id.*, ¶¶146, 172; *see also id.*, Fig. 8B. A POSITA would

understand that the claimed “first controller” storing the judgment table alone can only ascertain that device ID “IDA” or “IDB” have copyright protection level set for additional information “2.” *See id.* This structure facilitates an access control check: “Is device IDA allowed to receive content type 2?” *Id.*, ¶181. A POSITA would not find obvious to use Futa’s judgment table to disclose or suggest the claimed “association information” because Futa’s judgment table is a permission to view content blindly controlled based on a permission filter whereas the “association information” is a one to one specific link for transmission of personalized content to a specific subsidiary terminal (*e.g.*, content-to-device mapping architecture). This is fundamentally different from the claimed “association information,” which must define a specific link between one specific content and one specific subsidiary terminal for the purpose of determining where to transmit that content. A POSITA would not have had any reasonable expectation to use Futa’s tables to render obvious the claimed “association information” because Futa’s judgment table defines group permissions based authorization, which is not specific content-to-device mapping transmission scheme. *See id.*, ¶172.

190. Furthermore, McClellan, relied upon by Petitioner for discussing operating system module descriptions, provides no teachings on storing content to device transmission information based on association information. *See* EX1010, 1:25–30. The combination thus lacks the claimed stored association information.

191. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that limitation [1h] would have been rendered obvious by Futa in view of McClellan.

3. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [1i] of Claim 1*

192. Claim limitation [1i] recites “wherein the association information defines that one of the contents identified by the content information is associated with one of the device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

193. As an initial matter, for, at least, the same reasons provided *supra* §IX.C.2 (claim limitation [1h]), Petitioner fails to establish claim limitation [1i] because Futa nor McClellan disclose the claimed “plurality of content information” and “association information.”

194. Petitioner again alleges that Futa’s judgment tables provide this definition. *See* Pet. at 74–76. Futa’s judgment tables define that devices have copyright protection level permitting to reception of content using “additional information.” *See* EX1009, ¶¶146, 169, 171-172, and 212. This does not disclose or suggest that the stored information defines an association linking one specific content to one specific device (*e.g.*, content-to-device mapping architecture), but it suggests a broadly applied permission filter for content authorization. Petitioner

conflates Futa’s category-based permission structure with the specific content to device association defined in the claim, which is used to provide a one-to-one association between a content and a device for the purposes of routing this content to the device. *Id.*

195. McClellan provides no relevant disclosure regarding the claimed association information for curing Futa’s deficiency. *See* Pet. 74–76. The combination fails to teach association information that defines the specific relationship required by the claim. A POSITA would not find the combination of Futa and McClellan’s judgment table in an improved operating system for accommodating system upgrades to render obvious the claimed limitation “association information” because Futa’s blind permission authorization filter in an improved operating system is not the same as transmitting personalized content to a specific device based a content-to-device mapping architecture. *See* Pet. at 75 (citing EX1002, ¶218).

196. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that limitation [1i] would have been rendered obvious by Futa in view of McClellan.

4. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [11] of Claim 1*

197. Claim limitation [11] recites “wherein, the main terminal determines whether it is possible to connect to the subsidiary terminal . . . and transmits the

content . . . based on the association information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

198. For the same reasons provided *supra* §IX.C.1–3 (claim limitations [1h] and [1i]), Petitioner fails to establish claim limitation [11] because no “plurality of content information” and “association information” are established.

199. Petitioner alleges Futa transmits based on its judgment tables. *See* Pet. at 80–81. The Futa-McClellan combination lacks the claimed “content information” and “association information.” Consequently, the combined system cannot transmit content based on association information. Futa’s system transmits content based on the result of its authorization check using the judgment tables—whether access to copyright material permission is granted or denied. *See* EX1009, ¶¶207, 212. Specifically, communication controller unit 407 performs a judgment (step S306) to see if the target device’s ID is included in the relevant judgment table for the content’s category information or additional information. *Id.*, ¶¶211–212. Transmission proceeds (steps S208-S210) only if this check is affirmative; otherwise, it is prohibited (step S207). *See id.*, ¶¶207–208. The basis for transmission is the permission status derived from the category-based rule check, not a lookup in a association information defining the specific content to device link (content-to-device mapping architecture). McClellan adds no relevant transmission logic. *See*

EX1010, 1:25–30. Because the combination lacks the claimed “plurality of content” and “association information,” it cannot perform the claimed step of transmitting based on “association information.”

200. A POSITA would not have used the combination of Futa and McClelland to render obvious this claim limitation because the judgment table is not “association information” for transmitting personalized content based on a one to one content to device mapping.

201. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that limitation [11] would have been rendered obvious by Futa in view of McClellan.

5. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim 2*

202. Claim 2 recites “[t]he contents reproducing system according to claim 1, wherein the main terminal includes a converter down-converting the content and transmits the down-converted content to the subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence Claim 2 using the combination of Futa in view of McClellan.

203. Because Claim 2 depends from Claim 1, it includes all of the limitations that Futa and McClellan fails to teach, as detailed in *supra* §IX.C.1–4. (claim limitations [1h], [1i], and [1l]). Petitioner’s argument for Claim 2 therefore fails for at least these same reasons. Petitioner’s arguments regarding the additional

limitation of a "converter down-converting the content," for which they cite no evidence in Futa or McClellan and merely make conclusory assertion of obviousness, cannot cure the fundamental deficiencies in Futa and McClellan.

204. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 2 would have been rendered obvious in view of Futa and McClellan.

6. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim 3*

205. Claim 3 recites "[t]he contents reproducing system according to Claim 1, wherein the main terminal includes a network interface and acquires the content from an external server via the network interface." In my opinion, Petitioner fails to establish by a preponderance of the evidence Claim 3 using the combination of Futa in view of McClellan.

206. Because Claim 3 depends from Claim 1, it includes all of the limitations that Futa and McClellan fails to teach, as detailed in *supra* §IX.C.1–4. (claim limitations [1h], [1i], and [1l]). Petitioner's argument for Claim 3 fails for at least these same reasons. Petitioner's arguments regarding the additional limitation of a "network interface" to acquire content from an external server cannot cure the fundamental deficiencies in Futa and McClellan.

207. For at least the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that Claim 3 would have been rendered obvious in view of Futa and McClellan.

7. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [4i] of Claim 4*

208. Claim limitation [4i] recites “[wherein the first controller is configured to . . .] store association information for transmitting one of the first content or the second content to one of the first subsidiary terminal or the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

209. For, at least, the same detailed reasons provided in supra §IX.C.1 and 3 (claim limitation [1h]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4i] would have been rendered obvious in view of Futa and McClellan.

8. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [4j] of Claim 4*

210. Claim limitation [4j] recites “wherein the association information defines that one of the first content or the second content is associated with one of the first device specific ID information or the second device specific ID information.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

211. For, at least, the same detailed reasons provided in *supra* §IX.C.4 (claim limitation [1i]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4j] would have been rendered obvious in view of Futa and McClellan. A POSITA would understand that the claimed “association information” is fundamentally different from Futa’s judgment table because the judgment table does not associate any of the claimed “first content” or “second content” with the “first device specific ID information” or “second device specific ID information” since judgment table only contains additional information and permitted device ID.

9. *A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [4o] of Claim 4*

212. Claim limitation [4o] recites “when the association information defines that the first content is associated with the first device specific ID information and the second content is associated with the second device specific ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

213. For, at least, the same reasons provided in *supra* §IX.C.5 (claim limitation [1l]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4o] would have been rendered obvious in view of Futa and McClellan. The combination of Futa and McClellan discloses or suggest

permission/authorization filter via judgment table or category information in an improved operating system for accommodating system upgrades. *See* EX1009, ¶¶10, 12, 146, 169-171; *see also id.*, Fig. 9 and Claim 1; *See* EX1010, 1:26-29. This is not the specific one to one mapping disclosed in this claim limitation “the first content is associated with the first device specific ID information and the second content is associated with the second device specific device ID information, the main terminal transmits the first content to the first subsidiary terminal and transmits the second content to the second subsidiary terminal.” A POSITA would understand that Futa and McClellan fail to render obvious the claimed “association information” because Futa’s judgment table is a blind permission filter not concerned with personalizing two contents for two devices; therefore, it fails to render obvious the claimed “first content is associated with the first device specific ID information,” “the second content is associated with the second device specific ID information,” and transmitting “the first content to the first subsidiary terminal” and “the second content to the second subsidiary terminal.”.

10. A POSITA Would Not Have Found It Obvious To Combine Futa and McClellan To Disclose Claim Limitation [4p] of Claim 4

214. Claim limitation [4p] recites “when the association information defines that the second content is associated with the first device specific ID information and the first content is associated with the second device specific ID information, the main terminal transmits the second content to the first subsidiary terminal and

transmits the first content to the second subsidiary terminal.” In my opinion, Petitioner fails to establish by a preponderance of the evidence this limitation using the combination of Futa in view of McClellan.

215. For, at least, the same reasons provided in *supra* §IX.C.5 (claim limitation [11]), Petitioner fails to show by a preponderance of the evidence that claim limitation [4p] would have been rendered obvious in view of Futa and McClellan. The combination of Futa and McClellan discloses or suggest **permission/authorization filter** via judgment table or category information in an improved operating system for accommodating system upgrades. *See* EX1009, ¶¶10, 12, 146, 169-171; *see also id.*, Fig. 9 and Claim 1; *see* EX1010, 1:26-29. This is not the specific reverse one to one mapping disclosed in this claim limitation. More specifically, the combination of Futa and McClellan fundamentally lacks the dynamic, concurrent routing matrix required by this limitation. Claim Limitation [4p] mandates an architecture capable of dynamically reversing its routing, directing the ”second content” to the ”first subsidiary terminal” and the ”first content” to the ”second subsidiary terminal” based on the stored association information. Futa cannot achieve this because its judgment table functions strictly as a static permission filter (e.g., checking if a device category is authorized for a content category). A POSITA would recognize that a static access-control gatekeeper cannot be equated with a centralized routing configuration to dynamically cross-route

specific contents to specific devices. Therefore, it fails to render obvious the claimed “the second content is associated with the first device specific ID information,” “the first content is associated with the second device specific ID information,” and transmitting “the second content to the first subsidiary terminal” and “the first content to the second subsidiary terminal.”

X. RESERVATION OF RIGHTS

216. In addition to the opinions and evidence expressed herein, I reserve the right to rebut any arguments made or evidence presented in response to this report. I also reserve the right to supplement this report based on further investigation or analysis.

217. At trial, I reserve the right to use graphic exhibits, demonstratives, live demonstrations of physical exhibits, or other visual aids to help illustrate the facts and opinions I express herein.

APPENDIX A

Radostin Pachamanov PhD

Director

781-201-4877

rado@quandarypeak.com

Quandary Peak Research

Boston, MA

<https://quandarypeak.com/rado/>

I am an expert in intellectual property litigation, specializing in patent, trade secret, and copyright matters. I have extensive consulting experience across diverse software and hardware technologies, including infringement and invalidity analyses, reverse engineering, hands-on testing of complex systems, and detailed source code analysis. I have authored numerous expert declarations in IPR proceedings and provided deposition testimony in multiple telecommunications-related cases.

My technical expertise is rooted in a strong telecommunications engineering background, covering mobile networks (5G, LTE, UMTS, GSM, CDMA, WiFi, WiMAX), fixed broadband networks, telecom protocols, OSS/BSS, TV platforms and standards, and technical surveillance systems.

Prior to consulting, I worked at Ericsson as a solution architect and account manager, leading major carrier projects from design to implementation.

Technical and Professional Expertise

- Deep academic knowledge and hands-on experience in telecommunications and information technology.
- Deep understanding of the broader telecommunications ecosystems, including knowledge about Operations Support Systems (OSS) and Billing Support Systems (BSS), as well as CRM and ERP applications.
- Proven ability to apply practical approaches to complex challenges and deliver successful outcomes.
- Strong leadership, team management, and cross-functional collaboration.
- Expertise and hands-on experience in intellectual property asset management and IP protection principles.
- Proficiency in source code analysis, including experience with Assembly, C/C++, Java, Python, SQL, Matlab, etc.

Education

Ph.D. in Telecommunications Engineering

Technical University of Sofia, Bulgaria | 2003–2008

Thesis: *Traffic Efficiency in Cellular Mobile Networks*

B.Sc., Eng. in Telecommunications Networks

Technical University of Sofia, Bulgaria | 1998–2002

Languages

- Fluent in English and Bulgarian
- Proficient in Russian

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Employment

Quandary Peak Research

Director | Boston, MA | Sept 2025–Present

- Conduct expert analyses in intellectual property litigation, including source code review, reverse engineering, and technical evaluations across telecommunications, software, and hardware technologies.

Elysium Digital, LLC

Director, Aon Intellectual Property Solutions | Boston, MA | Oct 2013–Jul 2025

- Provided in-depth technical analysis and consulting in patent litigation and IT technology-related intellectual property matters.
- Provided clients with strategic insights from Telecommunications and IT industries.
- Analyzed a large variety of patents for clients in the IT and Telecommunications domains in regard to infringement, validity and argument construction.
- Advised clients on IP strategy to leverage their existing assets, identify potential threats, and take advantage of new opportunities.
- Testified in patent litigation disputes.

Ericsson

Account Manager | Sofia, Bulgaria | Apr 2011–July 2013

- Project stakeholder in various system integration and network development projects and sales opportunities. Financial and cash flow management. Close interactions with Project Management Office and Logistics Department.
- Account management for telecom operators with millions in annual sales. Exceeded sales targets for 2012. Performed marketing campaigns, pricing analysis, and sales offers preparation.
- Researched industry trends and mapped industry information to develop business strategies for clients in the Telecommunications, Transport & Media and Public Administration sectors.
- Actively collaborated with customer teams in resolving contract negotiations.

Ericsson

Solutions Architect | Sofia, Bulgaria | Jan 2008–Mar 2011

- Technical project lead for strategic multimillion System Integration projects: Vivacom Satellite TV, Bulgarian National Border Security and Surveillance System.
- Developed solution design and cost optimization models for solutions in the OSS/BSS, TV & Media Management, and System Integration areas.
- Performed customer requirements analysis and solution assessments.
- Collaborated with internal corporate and external client team project stakeholders in complex organizations.
- Coordinated large teams of system integrators, solution architects and external subcontractors in complex system integration projects.

Technical University Of Sofia

Teaching Assistant | Sofia, Bulgaria | Mar 2003–Dec 2007

- Taught university courses: “Teletraffic Engineering” and “Telecommunications Networks”.
- Developed academic seminars.
- Provided guidance and support to students in thesis research.

Maxell, Ltd.
Ex. 2014
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Litigation Consulting

- **Maxell, Ltd. v. Samsung Electronics Co.** | Jan 2026–Present
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 5:25-cv-00052
Counsel: Mayer Brown LLP
Nature of Suit: Patent Infringement
- **In the Matter of Certain Mobile Cellular Communications Devices: Pantech Corp. v. OnePlus, Lenovo, TCL, Tinno, and HMD** | Oct 2025–Present
Jurisdiction: International Trade Commission (ITC)
Case Number: 337-TA-3835
Counsel: Mayer Brown LLP
Nature of Suit: Patent
- **Intellectual Ventures v. American Airlines, Inc.** | Oct 2025–Present
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 4:24-cv-00980
Counsel: Kasowitz LLP
Nature of Suit: Patent
- **Intellectual Ventures v. Southwest Airlines Co.** | Oct 2025–Present
Jurisdiction: U.S. District Court for the Western District of Texas
Case Number: 7:24-cv-00277
Counsel: Kasowitz LLP
Nature of Suit: Patent
- **CCC Information Services Inc. v. Tractable Inc.** | 2019–2024
Jurisdiction: U.S. District Court for the Northern District of Illinois
Case Number: 1:18-cv-07246
Counsel: Latham & Watkins
Nature of Suit: Trade Secret
Technology: AI and auto insurance claims technology
- **Oracle America, Inc. v. Hewlett Packard Enterprise Company** | 2017–2022
Jurisdiction: U.S. District Court for the Northern District of California
Case Number: 4:16-cv-01393
Counsel: Latham & Watkins
Nature of Suit: Trade Secret
- **Dolby Laboratories, Inc. v. Intertrust Technologies Corporation** | 2020–2021
Jurisdiction: U.S. District Court for the Northern District of California
Case Number: 3:19-cv-03371
Counsel: Quinn Emanuel Urquhart & Sullivan, LLP
Nature of Suit: Patent
Technology: DRM and secure content distribution

- **Dali Wireless, Inc. v. John Mezzalingua Associates, LLC** | 2021
Jurisdiction: U.S. District Court for the District of Delaware
Case Number: 1:19-cv-02367
Counsel: Folio Law Group
Nature of Suit: Patent
Technology: Wireless/mobile telecommunications technology
- **Vaporstream, Inc. v. Snap Inc. d/b/a Snapchat, Inc.** | 2015–2020
Jurisdiction: U.S. District Court for the Central District of California
Case Number: 2:17-cv-00220
Counsel: Susman Godfrey LLP
Nature of Suit: Patent
Technology: Ephemeral communications
- **Entrust Datacard Corporation v. Atlantic Zeiser GmbH, et al.** | 2019
Jurisdiction: U.S. District Court for the Middle District of Florida
Case Number: 3:17-cv-00110
Counsel: Briggs & Morgan, PA
Nature of Suit: Patent
Technology: Smart card technology and hardware controlling software
- **Oracle USA, Inc., et al. v. Rimini Street, Inc., et al.** | 2014–2019
Jurisdiction: U.S. District Court for the District of Nevada
Case Number: 2:10-cv-00106
Counsel: Boies Schiller Flexner LLP
Nature of Suit: Copyright
Technology: Enterprise software support services and practices
- **Maxell, Ltd. v. ASUSTeK Computer Inc., et al.** | 2019
Jurisdiction: U.S. District Court for the Northern District of California
Case Number: 3:18-cv-01788
Counsel: Mayer Brown
Nature of Suit: Patent
Technology: Digital camera technology and automatic gain control in cell phones
- **The People of the State of New York by Eric T. Schneiderman v. Charter Communications, Inc., et al.** | 2018
Jurisdiction: Supreme Court of the State of New York, County of New York
Case Number: 450318/2017
Counsel: Latham & Watkins LLP
Nature of Suit: Regulatory
Technology: Internet infrastructure and network capacity testing
- **Rimini Street, Inc. v. Oracle International Corporation** | 2015–2018
Jurisdiction: U.S. District Court for the District of Nevada
Case Number: 2:14-cv-01699
Counsel: Morgan Lewis & Bockius LLP
Nature of Suit: Copyright
Technology: Enterprise software support services and practices
- **Hitachi Maxell, Ltd. v. ZTE Corporation, et al.** | 2017–2018
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 5:16-cv-00179
Counsel: Mayer Brown

Nature of Suit: Patent
Technology: Mobile technology

- **Hitachi Maxell, Ltd. v. Huawei Technologies Co., Ltd., et al.** | 2017–2018
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 5:16-cv-00178
Counsel: Mayer Brown
Nature of Suit: Patent
Technology: Mobile technology
- **Rovi Guides Inc., et al. v. Comcast Corporation, et al.** | 2016–2017
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 2:16-cv-00321; 2:16-cv-00322
Counsel: McKool Smith
Nature of Suit: Patent
Technology: Digital video recorder technology
- **Motorola Solutions, Inc. v. Hytera Communications Corporation Ltd.** | 2017
Jurisdiction: U.S. District Court for the Northern District of Illinois, Eastern Division
Case Number: 1:17-cv-01973
Counsel: Kirkland & Ellis LLP
Nature of Suit: Trade Secret
Technology: Two-way radio transmissions
- **Uniloc USA, Inc., et al v. Avaya Inc.** | 2017
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 6:15-cv-01168
Counsel: Prince Lobel Tye LLP
Nature of Suit: Patent
Technology: Conference calling technology
- **Telesocial Inc. v. Orange S.A., et al.** | 2016
Jurisdiction: U.S. District Court for the Northern District of California
Case Number: 3:14-cv-03985
Counsel: Quinn Emanuel Urquhart & Sullivan, LLP
Nature of Suit: Trade Secret
Technology: Social calling app
- **TCL Communication Technology Holdings, Ltd v. Telefonaktienbolaget LM Ericsson, et al.** | 2016
Jurisdiction: U.S. District Court for the Central District of California
Case Number: 8:14-cv-00341
Counsel: McKool Smith
Nature of Suit: Patent
Technology: Telecommunications technology
- **Ericsson Inc., et al. v. TCL Communication Technology Holdings Limited, et al.** | 2016
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 2:15-cv-00011
Counsel: McKool Smith
Nature of Suit: Patent
Technology: Telecommunications technology

- **Ericsson Inc., et al. v. TCL Communication Technology Holdings Limited, et al.** | 2015
Jurisdiction: U.S. District Court for the Central District of California
Case Number: 2:15-cv-02370
Counsel: McKool Smith
Nature of Suit: Patent
Technology: Telecommunications technology
- **In the Matter of Certain Wireless Standard Compliant Electronic Devices, Including Communication Devices and Tablet Computers** | 2015
Jurisdiction: International Trade Commission (ITC)
Investigation Number: ITC-337-TA-953
Counsel: McKool Smith
Nature of Suit: Patent
- **In the Matter of Certain Electronic Devices, Including Wireless Communication Devices, Computers, Tablet Computers, Digital Media Players, and Cameras** | 2015
Jurisdiction: International Trade Commission (ITC)
Investigation Number: ITC-337-TA-952
Counsel: McKool Smith
Nature of Suit: Patent
- **Ericsson Inc., et al. v. Apple Inc.** | 2015
Jurisdiction: U.S. District Court for the Eastern District of Texas
Case Number: 2:15-cv-00287, 2:15-cv-00293
Counsel: McKool Smith
Nature of Suit: Patent
Technology: Data transmission and generation of keys in encrypted or decrypted LTE data
- **Bridgestone Americas Tire Operations, LLC v. Schrader-Bridgeport International, Inc.** | 2014–2015
Jurisdiction: U.S. District Court for the District of Delaware
Case Number: 1:13-cv-00763
Counsel: Wilmer Hale
Nature of Suit: Patent
Technology: Automotive embedded systems technology
- **St. Jude Medical Cardiology Division Inc. v. Volcano Corporation** | 2014
Jurisdiction: U.S. District Court for the District of Delaware
Case Number: 1:12-cv-00441
Counsel: Fish & Richardson
Nature of Suit: Patent
Technology: Medical technology
- **Smartflash LLC, et al. v. Samsung Electronics Co. Ltd., et al.** | 2014
Jurisdiction: U.S. District Court for the Eastern District of Virginia
Case Number: 6:13-cv-00448
Counsel: Quinn Emanuel
Nature of Suit: Patent
Technology: DRM technology and in-app payment transactions

Testimony Experience

- **Ericsson, Inc., et al. v. Koninklijke KPN N.V.** | 2023
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2023-00582
Counsel: Cabello Hall Zinda
Nature of Suit: Patent
Technology: Telecommunications
Role: Submitted expert declaration
- **Ericsson, Inc., et al. v. Koninklijke KPN N.V.** | 2023
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2023-00524
Counsel: Cabello Hall Zinda
Nature of Suit: Patent
Technology: Telecommunications
Role: Submitted expert declaration
- **Ericsson, Inc., et al. v. Koninklijke KPN N.V.** | 2023
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2022-00068
Counsel: Hamilton Brook Smith & Reynolds
Nature of Suit: Patent
Technology: Telecommunications
Role: Deposed and submitted expert declaration
- **Ericsson, Inc., et al. v. Koninklijke KPN N.V.** | 2022
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2022-00069
Counsel: Hamilton Brook Smith & Reynolds
Nature of Suit: Patent
Technology: Telecommunications
Role: Deposed and submitted expert declaration
- **Ericsson, Inc., et al. v. Koninklijke KPN N.V.** | 2022
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2022-00079
Counsel: Hamilton Brook Smith & Reynolds
Nature of Suit: Patent
Technology: Telecommunications
Role: Deposed and submitted expert declaration
- **Sierra Wireless, Inc., et al. v. Koninklijke KPN N.V.** | 2018
Jurisdiction: U.S. Patent and Trademark Office, Patent Trial and Appeal Board
Case Number: 2018-00320
Counsel: Hamilton Brook Smith & Reynolds
Nature of Suit: Patent
Technology: Telecommunications
Role: Deposed and submitted expert declaration

Publications

- **Traffic efficiency enhancement of cellular structures in mobile networks.**
Pachamanov, R.A. (2008). Ph.D. dissertation, Technical University of Sofia.
- **Resource planning for voice over wireless both-way transmission media.**
Pachamanov, R.A., Tsankov, B., & Pachamanova, D. (2008). Radioengineering Journal, 17(1), 78–81.
- **Optimal resource allocation in WiMAX.**
Pachamanov, R.A., Pachamanova, D., & Tsankov, B. (2008). Electrotechnica & Electronica, 43(1–2), 41–47.
- **Modified Brady voice traffic model for WLAN and WMAN.**
Pachamanov, R.A., Tsankov, B., & Pachamanova, D. (2007). Electronics Letters, 43(23), 1295–1297.
<https://doi.org/10.1049/el:20072425>
- **A model for WiMAX simulation.**
Pachamanov, R.A. (2007, October). In Proceedings of the National Conference with International Participation Telecom.
- **An optimization-based connection admission control method for IEEE 802.16 wireless networks.**
Pachamanov, R.A., & co-authors (2007, September). In Proceedings of IEEE Africon.
- **Throughput and fairness in IEEE 802.16 broadband wireless networks.**
Pachamanov, R.A., & co-authors (2007, June). In Proceedings of the International Scientific Conference on Information, Communication and Energy Systems and Technologies (ICEST).
- **Analytical performance evaluation of WiMAX.**
Pachamanov, R.A., & co-authors (2007, October). In Proceedings of the National Conference with International Participation Telecom.
- **Priority traffic management in IP networks.**
Pachamanov, R.A., & co-authors (2004, October). In Proceedings of the National Conference with International Participation Telecom.
- **Umbrella-cell in cellular networks: Traffic efficiency analysis.**
Pachamanov, R.A., & co-authors (2003, October). In Proceedings of the National Conference with International Participation Telecom.

Certifications

- **Google Cybersecurity Professional Certificate** | 2024
- **Harvard Law School – Mediation and Conflict Management** | 2018
- **Harvard Law School – Negotiation and Dispute Resolution** | 2018
- **IEEE – Wireless Communications Professional** | 2017