

**EXPERT DECLARATION OF DR. KEVIN NEGUS
FOR
COVERED BUSINESS METHOD REVIEW OF U.S. PATENT NO.
9,053,494**

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I. INTRODUCTION

1. I, Dr. Kevin Negus, submit this declaration in support of a Petition for Covered Business Method Review of United States Patent No. 9,053,494 (“the ‘494 Patent”), owned by Customedia Technologies L.L.C. (“Customedia” or “Patent Owner”). I have been retained in this matter by Baker Botts LLP (“Counsel”) on behalf of DISH Network L.L.C. (“Petitioner”). Petitioner DISH Network L.L.C. and DISH Network Corporation (“DISH”) along with non-parties EchoStar Corporation and EchoStar Technologies L.L.C. (collectively, “EchoStar”) and INVIDI Technologies Corporation (“Invidi”) are the Real Parties-in-Interest to this Petition. DISH is a provider of direct broadcast satellite (DBS) services.

2. I make this declaration based upon my personal knowledge. I am over the age of 21 and am competent to make this declaration.

3. The statements herein include my opinions and the bases for those opinions, which relate to at least the following documents of the pending covered business method review petition:

- U.S. Patent No. 8,719,090 by William Henry Lewis entitled “System for data management and on-demand rental and purchase of digital data products” (“the ‘090 Patent”) (Ex. 1001).
- File History for U.S. Patent No. 8,719,090 (Ex. 1002).

- U.S. Patent No. 9,053,494 by William Henry Lewis entitled “System for data management and on-demand rental and purchase of digital data products” (“the ‘494 Patent”) (Ex. 1003).
- File History for U.S. Patent No. 9,053,494 (Ex. 1004).
- File History for U.S. Patent Application No. 08/873,584 (Ex. 1005).
- File History for U.S. Patent Application No. 09/087,517 (Ex. 1006).
- File History for U.S. Patent Application No. 09/383,994 (Ex. 1007).
- U.S. Patent No. 5,774,170 by Kenneth C. Hite et al. entitled “System and method for delivering targeted advertisements to consumers” (“Hite”) (Ex. 1009).
- U.S. Patent No. 4,607,346 by Reed A. Hill, entitled “Apparatus and method for placing data on a partitioned direct access storage device” (“Hill”) (Ex. 1010).
- U.S. Patent No. 6,029,045 by Martin R. Picco et al. entitled “System and method for inserting local content into programming content” (“Picco”) (Ex. 1011).
- Red-line showing changes between disclosure filed in U.S. Patent Application No. 08/873,584 and disclosure filed in U.S. Patent Application No. 09/383,994 (Ex. 1012).
- Complaint, *Customedia Technologies, L.L.C. v. DISH Network L.L.C. et al.*,

No. 2:16-CV-00129 (E.D. Tex.) (Ex. 1013).

- Customedia’s Disclosure of Asserted Claims, Infringement Contentions, and Accompanying Document Production, and attached claim charts (Ex. 1016).
- Patent Owner’s Responses to Petitioner’s First Set of Interrogatories (served Aug. 4, 2016) (Ex. 1017).
- Patent Owner’s First Amended Response to Petitioner’s Interrogatory No. 1 (served Sept. 16, 2016) (Ex. 1018).
- Letter from Petitioner to Patent Owner dated August 29, 2016, regarding issues with Patent Owner’s responses to Petitioner’s First Set of Interrogatories (Ex. 1019).
- U.S. Patent No. 5,758,257 by Frederick Herz *et al.*, entitled “System and Method for Scheduling Broadcast of and Access to Video Programs and Other Data Using Customer Profiles” (“Herz”) (Ex. 1020).
- U.S. Patent No. 5,721,827 by James Logan *et al.*, entitled “System for Electronically Distributing Personalized Information” (“Logan”) (Ex. 1021),
- U.S. Patent No. 6,067,107 by Timothy V. Travaille *et al.*, entitled “Response Capacity Management in Interactive Broadcast Systems by Periodic Reconfiguration of Response Priorities” (“Travaille”) (Ex. 1022).
- U.S. Patent No. 6,876,974 by Marsh *et al.*, entitled “Scheduling the Presentation of Messages to Users” (“Marsh”) (Ex. 1023).

- Excerpts of the IEEE 100: The Authoritative Dictionary of IEEE Standard Terms, Seventh Edition, 2000 (Ex. 1024).
- U.S. Patent No. 5,027,400 by Toru Baji *et al.*, entitled “Multimedia Bidirectional Broadcast System” (“Baji”) (Ex. 1025).
- U.S. Patent No. 6,233,389 by James M. Barton *et al.*, entitled “Multimedia Time Warping System” (“Barton”) (Ex. 1026).

4. My materials considered for forming my opinions herein have included at least the above-referenced documents.

5. Although I am being compensated for my time at a rate of \$500 per hour in preparing this declaration, the opinions herein are my own, and I have no stake in the outcome of the review proceeding. My compensation does not depend in any way on the outcome of the Petitioner’s petition.

II. QUALIFICATIONS

6. I am qualified by education and experience to testify as an expert in the field of telecommunications. Attached, as Attachment A, is a copy of my resume detailing my experience and education. Additionally, I provide the following overview of my background as it pertains to my qualifications for providing expert testimony in this matter.

7. I am a Full Professor of Electrical Engineering at Montana Tech University in Butte, MT. I lead a research program at Montana Tech to improve the delivery of mobile broadband communications services to rural and remote areas. I mentor, supervise and teach both senior undergraduate and graduate students of Electrical Engineering in the general fields of telecommunications and networking with an emphasis on wireless systems.

8. In 1988, I received my Ph.D. in Engineering from the University of Waterloo in Canada. The Departments of Electrical Engineering and Mechanical Engineering jointly supervised my Ph.D. research on the modeling of bipolar semiconductor devices. My graduate course work was primarily in Electrical Engineering and included such subjects as semiconductor device physics and fabrication, wireless circuit design, and wireless propagation analysis. For my Ph.D. work, I received the Faculty Gold Medal in 1988 for the best Ph.D. thesis in the entire Faculty of Engineering across all Departments for that year. My Ph.D.

thesis research also formed the basis of a paper published in 1989 that won the award for Best Paper in 1989 for the IEEE (Institute of Electrical and Electronic Engineers) journal in which it was published.

9. In 1984 and 1985, respectively, I received the B.A.Sc. and M.A.Sc. Degrees in Mechanical Engineering from the University of Waterloo in Canada. My coursework and research work included, amongst many other topics, extensive embedded firmware development for automation applications and implementation of networks and communications protocols. For my M.A.Sc. Degree research and academic achievements, I received the prestigious University Gold Medal in 1985 for the best Masters thesis in the entire University of Waterloo for that year.

10. In 1986, I joined the Palo Alto Research Center of Fairchild Semiconductor in Palo Alto, CA. At Fairchild, I participated in the development of devices and products for high-speed applications such as wired networking, RISC microprocessors and wireless communications.

11. In 1988, I took the position of Member of the Technical Staff at Avantek, Inc. in Newark, CA. I was hired to develop products for both wireless and wired data networking applications. Some of the components I developed early in my career at Avantek were used for 1st generation wireless local area network (WLAN) products, voiceband modem equipment, wired data networking

both in the LAN and WAN and 1st generation cellular handsets and base stations based on AMPS or TACS.

12. In 1991, the Hewlett-Packard Company purchased Avantek, Inc. I continued to work for Hewlett-Packard until 1998 in such roles as IC Design Manager, Director of Chipset Development and Principal System Architect. In 1992, Hewlett-Packard assigned me to work on the “Field of Waves” project, which was a major multi-division effort to build WLAN products for mobile computers. The project was cancelled in 1993. However, the work I did on the project was leveraged into producing the world’s first IEEE 802.11 chipset, which my division at Hewlett-Packard first offered for sale in 1994. I led the project to develop and market this chipset for many early WLAN product companies including Proxim, Symbol (now part of Motorola) and Aironet (now part of Cisco). I also helped coordinate efforts within Hewlett-Packard to guide extensive research projects on WLAN protocols and technology at Hewlett-Packard’s central research laboratories in Palo Alto, CA and Bristol, U.K.

13. I developed or led the development of multiple chips and chipsets for 2G cellular radio systems based on GSM, IS-54 (TDMA), and IS-95 (CDMA). A number of these chips were directed solely to cellular mobile stations and done specifically for major Hewlett-Packard customers and cellular handset and module manufacturers such as Motorola, Ericsson and Siemens. I was also involved in the

development of power amplifier chips and modules for cellular mobile stations, cordless phones, wireless networking devices and cellular infrastructure products including those directed towards then emerging 3G cellular standards such as WCDMA, 1xRTT and EV-DO.

14. During my time at Avantek and Hewlett-Packard, I also developed or led development teams for numerous chipsets or general purpose chips used in other wired and wireless communications applications such as fiber optic transceivers, cordless telephones, cable set-top receivers, wired networking equipment, cellular infrastructure equipment, voiceband and broadband wired modems and satellite TV receivers.

15. In 1998, I joined Proxim, Inc. in Mountain View, CA. At that time, Proxim was engaged in the development and sale of wired and wireless products for home and enterprise networking applications based on several different wired and wireless networking protocols. I stayed at Proxim through 2002 and was the Chief Technology Officer for this publicly-traded company at the time of my departure. During my career at Proxim, I led or participated in the development of many WLAN and WWAN products and/or chipsets for network adapters, OEM design-in modules, access points, bridges, switches, and routers that used a wide variety of bus, LAN, or WAN wired interfaces. I have supervised many engineers including those responsible for embedded firmware development to implement

various wired and wireless networking, reservation, and security protocols at the MAC layer and above, those responsible for HDL code creation of baseband chips to implement PHY and MAC algorithms, as well as other engineers that developed hardware reference designs, modem algorithms and chipsets.

16. During my many years of development of products providing voice, data and/or streaming media capabilities, I have acquired a deep understanding of the cellular radio system, the Public Switched Telephone Network (PSTN) and the public Internet network architectures and protocols. A partial list of networking and telephony protocols that I am familiar with includes DHCP, SNMP, TCP, UDP, IP, SIP, ICMP, SS7, ISDN, ISUP, TCAP, and MTP.

17. Over the past 30 years I have personally developed, modified, or analyzed numerous software or firmware modules for many different applications as well as supervised many engineers performing the same tasks. I have implemented or supervised the implementation of software and firmware code and/or hardware description language (HDL) code for many different communications protocols across all layers. I have developed or supervised the development of chips with both wireless baseband modem functionality and embedded processors including those licensed by ARM and MIPS. I have programmed with multiple high level languages for software and firmware code including C, C++, Fortran, Forth, BASIC, Pascal, Lisp and COBOL. I have

developed products with HDL code including VHDL and Verilog. I also have firsthand experience with assembly language programming. I have personally designed a wide variety of analog, RF, and digital circuit elements at both the chip and board level using various netlist-driven, schematic capture and manual or automated layout CAE/CAD tools.

18. Since 2002, I have been an independent consultant and have provided services to a number of companies including some that have developed IEEE 802.11 products. In particular, from 2002 until 2007 I was Chairman of WiDeFi, Inc. – a company that developed chips and embedded firmware for 802.11 repeater products based on 802.11a, b, g and draft n amendments. From 2007-2011, I was Chairman of Tribal Shout – a company that delivered IP voice and audio streaming media using VoIP to any cellular or landline phone including those reachable only by the circuit-switched connections such as the PSTN and 2nd generation cellular radio. Since 2010, I have been Chairman and Chief Technology Officer of CBF Networks, Inc. (dba Fastback Networks) – a company that develops fiber extension products for backhaul of data networks including WiFi, HSPA, CDMA2000, WiMax and LTE cellular radio systems. I have architected the products of Fastback Networks specifically around the re-use of chips originally developed and intended for LTE standards-based operation.

19. I have been or am currently a Board Observer on behalf of the venture capital firm Camp Ventures at two companies that develop semiconductor components including one that developed technology specifically to improve the system performance of HSPA and LTE cellular radio systems (Quantance) and another that provides system on a chip (SOC) microcontrollers, OEM design-in modules and firmware with 802.11 and wired interfaces for embedded applications (GainSpan). I have also been a technology and/or business strategy advisor to multiple early stage companies that are developing such products as new wireless communications security systems (AirTight), RFID radio systems (Mojix) and time/frequency reference components (SiTime).

20. I have actively monitored or participated in the IEEE 802.11 standards process continuously since 1989. I am a listed contributor to the highly successful IEEE 802.11g standard published in 2003 that describes a wireless communications protocol in use worldwide by over 5 billion devices. In 2002 and 2003, I participated in the IEEE 802.11 Wireless Next Generation Committee that was responsible for launching the 802.11n standards development process.

21. In 1996, I was assigned the responsibility within the Hewlett-Packard Company for developing the HomeRF standard for WLANs specifically for home networking applications. I eventually became Chairman of the Technical Subcommittee of HomeRF that wrote the HomeRF standard. The HomeRF

standard was essentially a modification of the IEEE 802.11 standard with significant changes to the PHY and MAC layers to lower cost and improve performance and security for home networking applications including integrated voice capability over both IP and circuit-switched connections. From 1998 to 2002, millions of wireless network adapters and access points from several different companies were shipped based upon compliance to the HomeRF standard.

22. I have specific experience with many wired and wireless networking standards including IEEE 802.1 and 802.3 (the “Ethernet” family of wired LANs), IEEE 802.11 (the “WiFi” family of wireless LANs), IEEE 802.15 (personal area networks or “PAN”), IEEE 802.16 (also known as “WiMax”), various cellular communications standards (such as IS-19, IS-41, IS-54, IS-95, IS-136, IS-826, IS-707, IS-856, IS-2000, GSM, GPRS, EDGE, UMTS, CAMEL, WCDMA, HSPA, and LTE), various cordless telephone standards (such as CT-2, DECT, and PHS), and other wired networking standards (such as DOCSIS, SONET and FDDI).

23. I am an author or co-author of many papers that have been published in distinguished engineering journals or conferences such as those of the IEEE or ASME. An exemplary list of these publications is included in my resume.

24. I am also a former member of the Federal Communication Commission’s Technological Advisory Committee as an appointee of then Chairman Michael Powell. I have also served on the Wyoming

Telecommunications Council as an appointee of then Governor Jim Geringer after confirmation by the Wyoming State Senate.

25. I am named as an inventor on numerous U.S. patents all of which have related in at least some way to products for wired and/or wireless networks. I believe that the following is a complete list as of this date for my approximately 48 issued U.S. Patents: 4,839,717, 5,111,455, 5,150,364, 5,436,595, 5,532,655, 6,587,453, 7,035,283, 7,085,284, 7,187,904, 8,095,067, D704174, 8,238,318, 8,300,590, 8,311,023, 8,385,305, 8,422,540, 8,467,363, 8,502,733, 8,638,839, 8,649,418, 8,761,100, 8,811,365, 8,824,442, 8,830,943, 8,872,715, 8,897,340, 8,928,542, 8,942,216, 8,948,235, 8,982,772, 8,989,762, 9,001,809, 9,049,611, 9,055,463, 9,178,558, 9,179,240, 9,226,315, 9,226,295, 9,252,857, 9,282,560, 9,313,674, 9,325,398, 9,345,036, 9,350,411, 9,374,822, 9,408,215, 9,474,080, 9,490,918.

26. During the past several years, I have provided expert testimony, reports or declarations in the cases of *Agere v. Sony* (on behalf of plaintiff Agere), *Linex v. Belkin et al.* (on behalf of defendant Cisco), *CSIRO v. Toshiba et al.* (multiple related cases on behalf of plaintiff CSIRO), *Freedom Wireless v. Cingular et al.* (on behalf of plaintiff Freedom Wireless), *Rembrandt v. HP et al.* (on behalf of defendant HP), *DNT v. Sprint et al.* (on behalf of the defendants Sprint, T-Mobile, US Cellular, Verizon and Novatel), *Teles v. Cisco* (on behalf of

defendant Cisco), *WiAV v. HP* (on behalf of defendant HP), *SPH v. Acer et al.* (on behalf of defendants Sony, Nokia, Motorola, Novatel, Sierra and Dell), *LSI v. Funai* (on behalf of plaintiff LSI), *WiAV v. Dell and RIM* (on behalf of the defendants Dell and RIM), *Wi-LAN v. RIM* (on behalf of defendant RIM), *LSI v. Barnes & Noble* (on behalf of plaintiff LSI), *Novatel v. Franklin and ZTE* (on behalf of plaintiff Novatel), *LSI v. Realtek* (on behalf of plaintiff LSI), *Wi-LAN v. Apple et al.* (on behalf of defendants Apple, Sierra and Novatel), *EON v. Sensus et al.* (on behalf of defendants Motorola, US Cellular and Sprint), *M2M v Sierra et al.* (multiple related cases on behalf of defendants Sierra and Novatel), *Intellectual Ventures v. AT&T et al.* (on behalf of defendants AT&T, T-Mobile and Sprint), *Intellectual Ventures v. Motorola* (on behalf of defendant Motorola), *TQ Beta v. Dish et al.* (on behalf of defendant Dish), *Qurio v. Dish et al.* (on behalf of defendant Dish), *Fatpipe v. Talari* (on behalf of the defendant Talari), *EON v. Apple* (on behalf of defendant Apple), *Chrimar v. Dell* (on behalf of defendant Dell) and *Nokia v. LGE* (on behalf of plaintiff Nokia).

III. PERSON OF ORDINARY SKILL IN THE ART

27. I understand that the content of a patent (including its claims) and prior art should be interpreted the way a person of ordinary skill in the art (or “POSITA”) would have interpreted the material at the alleged time of invention.

28. I understand that the “alleged time of invention” here is no earlier than the date that the applicant for the ‘090 and ‘494 Patents first filed an application related to the ‘090 and ‘494 Patents in the United States Patent and Trademark Office, namely, August 26, 1999, as further discussed herein.

29. It is my opinion that the person of ordinary skill in the art (or “POSITA”) at the time of the filing date of the ‘090 and ‘494 Patents would have had at least a Bachelor of Science in Computer Science, Computer Engineering, Electrical Engineering, or an equivalent field as well as at least 2 years of academic or industry experience in any type of network equipment field.

30. In addition to my testimony as an expert, I am prepared to testify as someone who actually practiced in the field from 1986 to present, who actually possessed at least the knowledge of a person of ordinary skill in the art in that time period, and who actually worked with others possessing at least the knowledge of a person of ordinary skill in the art in that time period.

31. I understand that the person of ordinary skill is a hypothetical person who is assumed to be aware of all the pertinent information that qualifies as prior

art. In addition, the person of ordinary skill in the art makes inferences and takes creative steps.

IV. LEGAL UNDERSTANDING

32. I have a general understanding of validity based on my experience with patents and my discussions with counsel.

33. I have a general understanding of prior art and priority date based on my experience with patents and my discussions with counsel.

34. I understand that inventors are entitled to a priority date up to one year earlier than an actual date of filing of a patent application that provides written description support for a particular claim to the extent that they can show complete possession of such a particular claimed invention at such an earlier priority date and reasonable diligence to reduce such a particular claimed invention to practice between such an earlier priority date and such an actual date of filing. I understand that if the Patent Owner contends that particular claims are entitled to such an earlier priority date than such an actual date of filing, then the Patent Owner has the burden to prove this contention with specificity.

35. I understand that an invention by another must be made before the priority date of a particular patent claim in order to qualify as “prior art” under 35 U.S.C. § 102 or § 103, that a printed publication or a product usage must be publicly available before the priority date of a particular patent claim in order to qualify as “prior art” under 35 U.S.C. § 102(a), that a printed publication or a product usage or offer for sale must be publicly available more than one year prior

to the actual date of filing of a patent application that provides written description support for a particular claim in the United States in order to qualify as “prior art” under 35 U.S.C. § 102(b), or that the invention by another must be described in an application for patent filed in the United States before the priority date of a particular patent claim in order to qualify as “prior art” under 35 U.S.C. § 102(e). I understand that the Defendants have the burden of proving that any particular reference or product usage or offer for sale is prior art.

36. I have a general understanding of anticipation based on my experience with patents and my discussions with counsel.

37. I understand that anticipation analysis is a two-step process. The first step is to determine the meaning and scope of the asserted claims. Each claim must be viewed as a whole, and it is improper to ignore any element of the claim. For a claim to be anticipated under U.S. patent law: (1) each and every claim element must be identically disclosed, either explicitly or inherently, in a single prior art reference; (2) the claim elements disclosed in the single prior art reference must be arranged in the same way as in the claim; and (3) the identical invention must be disclosed in the single prior art reference, in as complete detail as set forth in the claim. Where even one element is not disclosed in a reference, the anticipation contention fails. Moreover, to serve as an anticipatory reference, the reference itself must be enabled, i.e., it must provide enough information so that a

person of ordinary skill in the art can practice the subject matter of the reference without undue experimentation.

38. I further understand that where a prior art reference fails to explicitly disclose a claim element, the prior art reference inherently discloses the claim element only if the prior art reference must necessarily include the undisclosed claim element. Inherency may not be established by probabilities or possibilities. The fact that an element may result from a given set of circumstances is not sufficient to prove inherency. I have applied these principles in forming my opinions in this matter.

39. I have a general understanding of obviousness based on my experience with patents and my discussions with counsel.

40. I understand that a patent claim is invalid under 35 U.S.C. § 103 as being obvious only if the differences between the claimed invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in that art. An obviousness analysis requires consideration of four factors: (1) scope and content of the prior art relied upon to challenge patentability; (2) differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art at the time of the invention; and (4) the objective evidence of non-obviousness, such as commercial success, unexpected results, the failure of others to achieve the results of the

invention, a long-felt need which the invention fills, copying of the invention by competitors, praise for the invention, skepticism for the invention, or independent development.

41. I understand that a prior art reference is proper to use in an obviousness determination if the prior art reference is analogous art to the claimed invention. I understand that a prior art reference is analogous art if at least one of the following two considerations is met. First a prior art reference is analogous art if it is from the same field of endeavor as the claimed invention, even if the prior art reference addresses a different problem and/or arrives at a different solution. Second, a prior art reference is analogous art if the prior art reference is reasonably pertinent to the problem faced by the inventor, even if it is not in the same field of endeavor as the claimed invention.

42. I understand that it must be shown that one having ordinary skill in the art at the time of the invention would have had a reasonable expectation that a modification or combination of one or more prior art references would have succeeded. Furthermore, I understand that a claim may be obvious in view of a single prior art reference, without the need to combine references, if the elements of the claim that are not found in the reference can be supplied by the knowledge or common sense of one of ordinary skill in the relevant art. However, I understand that it is inappropriate to resolve obviousness issues by a retrospective

analysis or hindsight reconstruction of the prior art and that the use of “hindsight reconstruction” is improper in analyzing the obviousness of a patent claim.

43. I further understand that the law recognizes several specific guidelines that inform the obviousness analysis. First, I understand that a reconstructive hindsight approach to this analysis, i.e., the improper use of post-invention information to help perform the selection and combination, or the improper use of the listing of elements in a claim as a blueprint to identify selected portions of different prior art references in an attempt to show that the claim is obvious, is not permitted. Second, I understand that any prior art that specifically teaches away from the claimed subject matter, i.e., prior art that would lead a person of ordinary skill in the art to a specifically different solution than the claimed invention, points to non-obviousness, and conversely, that any prior art that contains any teaching, suggestion, or motivation to modify or combine such prior art reference(s) points to the obviousness of such a modification or combination. Third, while many combinations of the prior art might be “obvious to try,” I understand that any obvious to try analysis will not render a patent invalid unless it is shown that the possible combinations are: (1) sufficiently small in number so as to be reasonable to conclude that the combination would have been selected; and (2) such that the combination would have been believed to be one that would produce predictable and well understood results. Fourth, I understand that if a claimed invention that

arises from the modification or combination of one or more prior art references uses known methods or techniques that yield predictable results, then that factor also points to obviousness. Fifth, I understand that if a claimed invention that arises from the modification or combination of one or more prior art references is the result of known work in one field prompting variations of it for use in the same field or a different one based on design incentives or other market forces that yields predictable variations, then that factor also points to obviousness. Sixth, I understand that if a claimed invention that arises from the modification or combination of one or more prior art references is the result of routine optimization, then that factor also points to obviousness. Seventh, I understand that if a claimed invention that arises from the modification or combination of one or more prior art references is the result of a substitution of one known prior art element for another known prior art element to yield predictable results, then that factor also points to obviousness.

44. I understand that a dependent claim incorporates each and every limitation of the claim from which it depends. Thus, my understanding is that if a prior art reference fails to anticipate an independent claim, then that prior art reference also necessarily fails to anticipate all dependent claims that depend from the independent claim. Similarly, my understanding is that if a prior art reference or combination of prior art references fails to render obvious an independent claim,

then that prior art reference or combination of prior art references also necessarily fails to render obvious all dependent claims that depend from the independent claim.

45. I have a general understanding of unpatentable subject matter based on my experience with patents and my discussions with counsel.

46. I understand that a patent claim is invalid under 35 U.S.C. § 101 if it claims a law of nature, natural phenomenon, or an abstract idea. I further understand that a patent claim would be ineligible for patent protection, and therefore invalid under 35 U.S.C. § 101, if it claims a “building block of human ingenuity,” or if it merely recites a generic computer implementation of an abstract idea. I further understand that a patent claim is invalid under 35 U.S.C. § 101, if, setting aside any insignificant computer-based or field of use limitations, the claim is directed solely to an abstract idea. I further understand that adding token post-solution elements does not make an abstract concept patentable.

47. I understand that “If this threshold determination is met, we move to the second step of the inquiry and consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application.” This step entails the “search for an inventive concept – i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to

significantly more than a patent upon the” ineligible concept itself. I understand that an abstract idea with nothing more than “well-understood, routine, conventional activity” added is not patentable. Similarly, I understand that merely requiring a generic computer implementation fails to transform an abstract idea into a patent-eligible invention.

48. I further understand that although not dispositive of the “inventive concept” inquiry, one can use the “machine-or-transformation” test as “a useful and important clue” to assess whether a claim is patent-eligible. I further understand that under this test, a “claimed process is surely patent-eligible under § 101 if: (1) tied to a particular machine or apparatus; or (2) it transforms a particular article into a different state or thing.” Thus, I further understand that the “machine or transformation” test examines whether the claims are tied to a particular machine or apparatus, or transform a particular article into a different state or thing and if neither, then the test points to unpatentability.

49. I further understand that in determining whether a patent claim recites patentable subject matter, the claim must be considered as a whole.

50. I understand that a general purpose computer is not a “particular machine or apparatus” under this test.

51. I also have a general understanding of invalidity based on my experience with patents and my discussions with counsel.

52. I understand that under 35 U.S.C. § 112, ¶ 2 that a patent must include one or more claims that at least distinctly claim the subject matter that the inventor regards as his invention. I understand that a claim is indefinite if it fails to inform, with reasonable certainty, a person of ordinary skill in the art about the scope of the invention when read in light of the patent's specification and prosecution history. I further understand that a claim is indefinite if it impermissibly mixes two distinct classes of patentable subject matter, such as a mixture of an apparatus element and a method step.

53. I also understand that claim elements may be expressed as a means for performing a recited function as set out in 35 U.S.C. § 112, ¶ 6. I further understand that for such a means-plus-function element, the element is to be construed to cover only the structure or structures described in the patent specification for performing the exact function recited by the element and structural equivalents thereof. Thus, in an infringement (or anticipation) analysis involving such means-plus-function elements, one is required to consult the patent specification in order to determine the composition of the specific relevant structures for performing the recited functions. I further understand that if the patent specification fails to disclose to a person of ordinary skill in the art of any structure in the specification that is clearly linked or associated with the functions recited for a means-plus-function element, then such means-plus-function claim

element is invalid for indefiniteness. Additionally, I understand that if a structure that is purported to be clearly linked or associated with the functions recited for a means-plus-function element is not sufficiently definite such that it informs, with reasonable certainty, a person of ordinary skill in the art when read in light of the patent's specification and prosecution history about the scope of the structure and its equivalents thereof, then such means-plus-function claim element is also invalid for indefiniteness.

54. I understand that a claim including a means-plus-function element is literally infringed (or anticipated) if the accused product or method (or prior art reference) is found to have a structure that performs the identical recited function wherein that structure is identical or equivalent to structure disclosed in the patent for performing the identical recited function. I further understand that structures are deemed equivalent if they are insubstantially different. One way of determining whether structures are equivalent is to determine whether each performs the identical recited function in a substantially similar way to obtain a substantially similar result. I understand that a structural equivalence analysis must be supported by specific evidence, and that a conclusory statement alleging that a structure within an accused product or process is equivalent to structure disclosed in the patent for performing the identical recited function is insufficient. I further understand that an equivalent structure must have been available at the

time of the issuance of the claim including the means-plus-function element being considered.

55. I understand that a claim including a means-plus-function element is literally infringed (or anticipated) if the accused product or method (or prior art reference) is found to have a structure that performs the identical recited function wherein that structure is identical or equivalent to structure disclosed in the patent for performing the identical recited function. I further understand that structures are deemed equivalent if they are insubstantially different. One way of determining whether structures are equivalent is to determine whether each performs the identical recited function in a substantially similar way to obtain a substantially similar result. I understand that a structural equivalence analysis must be supported by specific evidence, and that a conclusory statement alleging that a structure within an accused product or process is equivalent to structure disclosed in the patent for performing the identical recited function is insufficient. I further understand that an equivalent structure must have been available at the time of the issuance of the claim including the means-plus-function element being considered.

56. I also understand that when construing means-plus-function limitations that concern a computer or a microprocessor that is programmed to

carry out an algorithm, the structure is to be construed as the algorithm as disclosed in the patent specification.

57. I further understand that literal infringement (or anticipation) of a means-plus-function claim limitation directed to a computer programmed to perform an algorithm requires that the software in the accused device (or prior art reference) use an algorithm that performs the same steps as the algorithm disclosed in the patent specification.

58. I understand that claim elements that recite the word “means” as a structural element for performing one or more recited functions are presumed to be covered by 35 U.S.C. § 112, ¶ 6.

59. However, I understand that claim elements that do not recite the word “means” but do comprise a non-structural term for performing one or more recited functions may also be covered by 35 U.S.C. § 112, ¶ 6 unless the words of the claim element itself are understood by persons of ordinary skill in the art to have a sufficiently definite meaning for the non-structural term.

60. Alternatively, I understand that 35 U.S.C. § 112, ¶ 6 does apply to claim elements that recite one or more functions when the claim element fails to recite a sufficiently definite structural element for performing the one or more functions.

V. THE ‘090 AND ‘494 PATENTS

61. I note that the ‘090 Patent was filed on May 18, 2004. I note that the ‘494 Patent was filed on Jan. 18, 2014 and claims priority to the ‘090 Patent. Other than changes to the claims and the addition of text associated with filing a continuation patent, I am not aware at this time of any substantive changes to the specification of the ‘494 Patent versus that of the ‘090 Patent. Thus, for purposes of my description herein, I will describe the ‘090 and ‘494 Patent specification(s) together simultaneously with exemplary references only to the ‘494 Patent.

62. The ‘090 and ‘494 Patents, both entitled “System for data management and on-demand rental and purchase of digital data products” relate to “a data handling system for the management of data received on one or more data feeds,” and more specifically to “a system for renting or purchasing data products for immediate, on-demand delivery, which may be formatted and transferred to a portable medium for use in any existing playback device” (see, for example, Ex. 1001 at 1:18-29).

A. Overview of the ‘090 and ‘494 Patents

63. In the “Description of the Prior Art” section, the ‘090 and ‘494 Patents note that at the time of the invention that “electronic commerce has blossomed on the Internet” but that a “comprehensive data management system is needed that forms a transaction (or commercial) zone where and through which

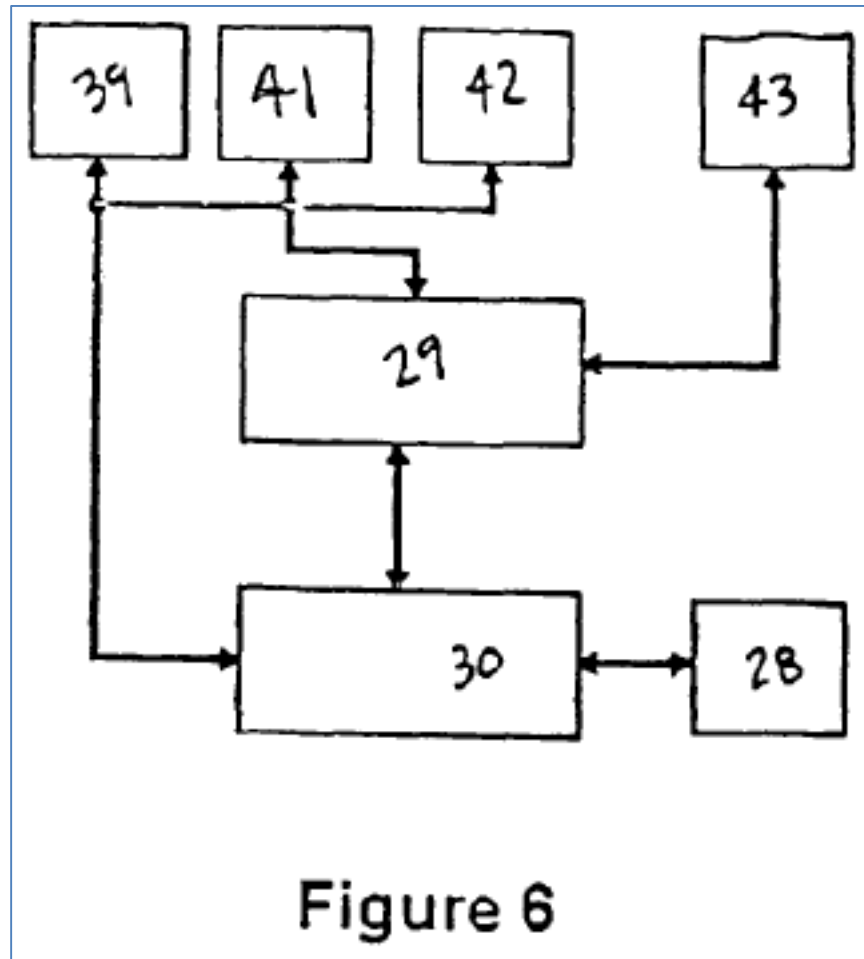
data can be selected, purchased or rented, received, stored, manipulated, and downloaded by a user and then downloaded to ultimate storage or use” and more specifically wherein such a “system also interfaces with current financial tools such as credit cards, checking accounts, ATM accounts, and other debit and credit systems to provide easy rental or purchase access” (see, for example, Ex. 1001 at 2:60-61, 3:3-16). Accordingly, the ‘090 and ‘494 Patents claim that the “current invention solves these problems through the use of an integrated information management and processing system that provides for the handling, sorting and storage of large amounts of data that is a user-defined and user resident environment” (see, for example, Ex. 1001 at 3:17-21).

64. The ‘090 and ‘494 Patents also describe in the “Summary of the Invention” section that an “object of this invention is to provide a system that creates a transaction or commercial zone for data to be received, manipulated, stored, retrieved, and accessed by a user, utilizing one or more data feeds from various sources” (see, for example, Ex. 1001 at 3:32-35). The ‘090 and ‘494 Patents further describe another 9 different “objects of the invention” (see, for example, Ex. 1001 at 3:39-4:14), one of which is a capability to “Rent/lease storage space in users Data Box to personalize and target advertising to the individual preferences of the user” (see, for example, Ex. 1001 at 4:10-12).

65. The “Summary of the Invention” section for the ‘090 and ‘494 Patents also recites several “preferred embodiments” and “variations of the invention,” none of which purport to be directed specifically to “advertising” (see, for example, Ex. 1001 at 4:15-11:20). However, this section introduces the “preferred embodiment” of a “digital data management system” that includes a “remote Account-Transaction Server (“ATS”))” and a “local host Data Management System and Audio/Video Processor Recorder-player (“VPR/DMS”) unit” (see, for example, Ex. 1001 at 4:15-19). More specifically this summary section describes that the “ATS may be local or placed at the content broadcaster's site” and that the “ATS stores and provides all potential programming information for use with the local VPR/DMS unit” including “data products for direct purchase and/or rental from on-line or virtual stores,” and further that such ATS “interfaces with billing authorities such as Visa, MasterCard, Discover, American Express, Diner's Club, or any other credit card or banking institution that offers credit or debit payment systems” (see, for example, Ex. 1001 at 4:19-29).

66. In the “Detailed Description of the Invention” section for the ‘090 and ‘494 Patents, “FIG. 6” is described as a “global diagram of the system including data content providers, remote account server, billing authorities, and the local receiver-recorder-player unit” or a “block diagram of the components of the entire

system as they interrelate during operation of the system” (see, for example, Ex. 1001 at 11:39-41, 21:41-43, FIG. 6 as reproduced herein).



67.

68. The ‘090 and ‘494 Patents disclose in reference to FIG. 6 that a “local VPR/DMS **30** provides the vehicle for program reception and recording, custom processing, and product download as well as program or product playback” such that the “VPR/DMS **30**” may be “a licensed “set top box” which houses the electronic components necessary for connection and operation” and/or may be “locally connected (or built in) to one or more consumer electronics units **28**” such

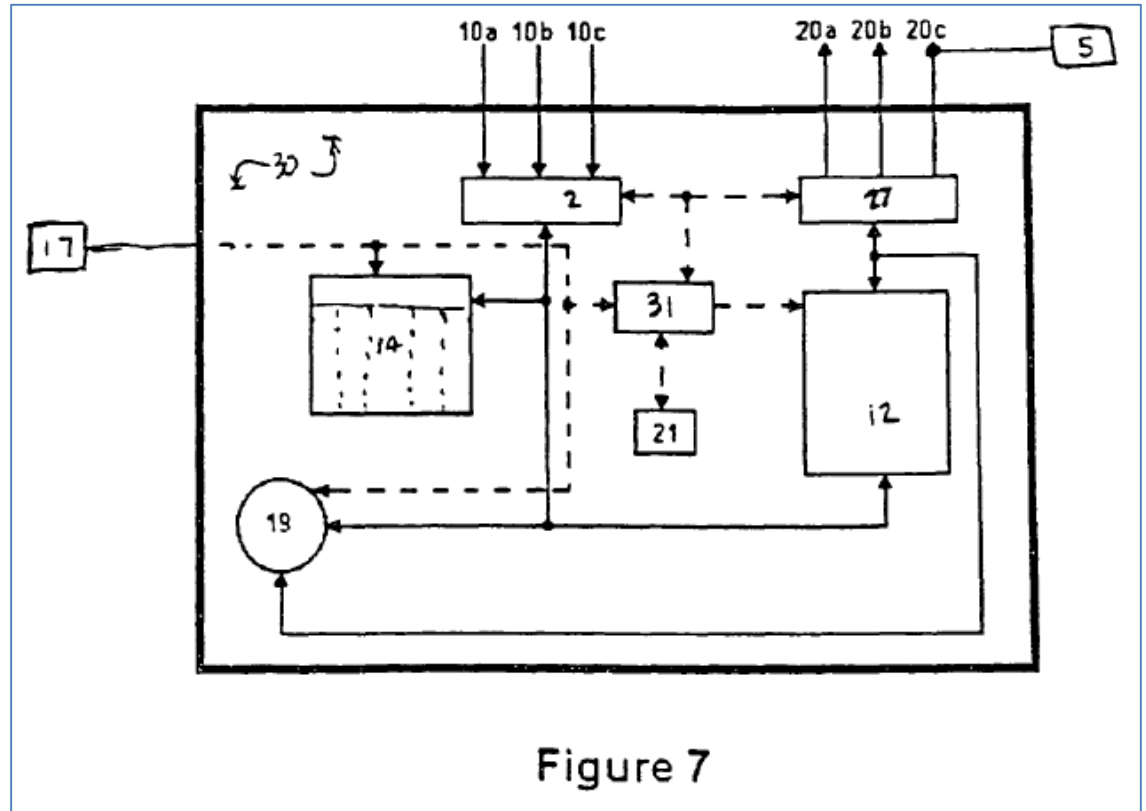
as “computers; home theater systems; home stereo receivers; CD recorders and/or players; audio and video multi-disc players; DAT recorders and/or players; Minidisc recorders and/or players; cassette tape recorders and/or players; televisions; VCRs; DVD players and/or recorders; Divx players; cable receivers; satellite receivers; or any other consumer electronics known in the art” (see, for example, Ex. 1001 at 21:44-57, FIG. 6).

69. The ‘090 and ‘494 Patents also disclose in reference to FIG. 6 that the “local VPR/DMS unit **30** is directly connected to broadcasters **39**, data content providers **41**, software accessory providers **42** and a remote Automatic Transaction Server (ATS) **29**” such that “Data products, including free or pay-per-view television or radio broadcasts, audio and/or video products, and software products may be received directly from the broadcasters **39**, data content providers **41**, and software accessory providers **42** and recorded on the local VPR/DMS **30**” (see, for example, Ex. 1001 at 22:5-12, FIG. 6).

70. The ‘090 and ‘494 Patents further disclose in reference to FIG. 6 that the “remote ATS **29** provides a billing interface between the end user and the content providers **39**, **41**, and **42** as well as an information and auto-programming source for local VPR/DMS unit **30**” wherein the “ATS **29**” may be located “at the content provider's site, or it may be administered by the content provider/broadcaster” (see, for example, Ex. 1001 at 22:13-18, FIG. 6). More

specifically, the “local VPR/DMS unit **30** interfaces with remote ATS **29** at regular intervals to download the latest programming/scheduling information for timed television/radio broadcasts so that the end user may reliably program local VPR/DMS unit **30** to record timed broadcasts” such that “remote ATS **29** provides local VPR/DMS unit **30** with an electronic catalog of audio, video or software products available for direct rental or purchase” and “user account information may be stored on remote ATS **29** or securely transmitted through remote ATS **29** for easy interface with billing authorities **30** and context providers **39**, **41**, and **42** to negotiate rentals, purchases or pay-per-view broadcasts” (see, for example, Ex. 1001 at 22:18-29, FIG. 6).

71. Also in the “Detailed Description of the Invention” section for the ‘090 and ‘494 Patents, “FIG. 7” is described as a “block diagram of a preferred embodiment of the local receiver-recorder-player unit” (see, for example, Ex. 1001 at 11:42-43, 22:30-32, FIG. 7 as reproduced herein).



73. The '090 and '494 Patents disclose in reference to FIG. 7 that "Data feeds **10a-10c**" directly link "broadcasters, content providers and the remote ATS to the local VPR/DMS unit **30**" such that "Data, including direct audio/video and software products, broadcast programs or audio/video data from local consumer electronics or computers is received and/or transmitted by local VPR/DMS unit **30**" (see, for example, Ex. 1001 at 22:33-38, FIG. 7). More specifically, the "Data on data feeds **10a-10c** is received by receiver **2** which digitizes received analog data and which may compress both digitized analog data and native digital data" such that "Once data has been received and compressed or digitized, the receiver **2** passes the data on to the non-movable storage device **14** for immediate or

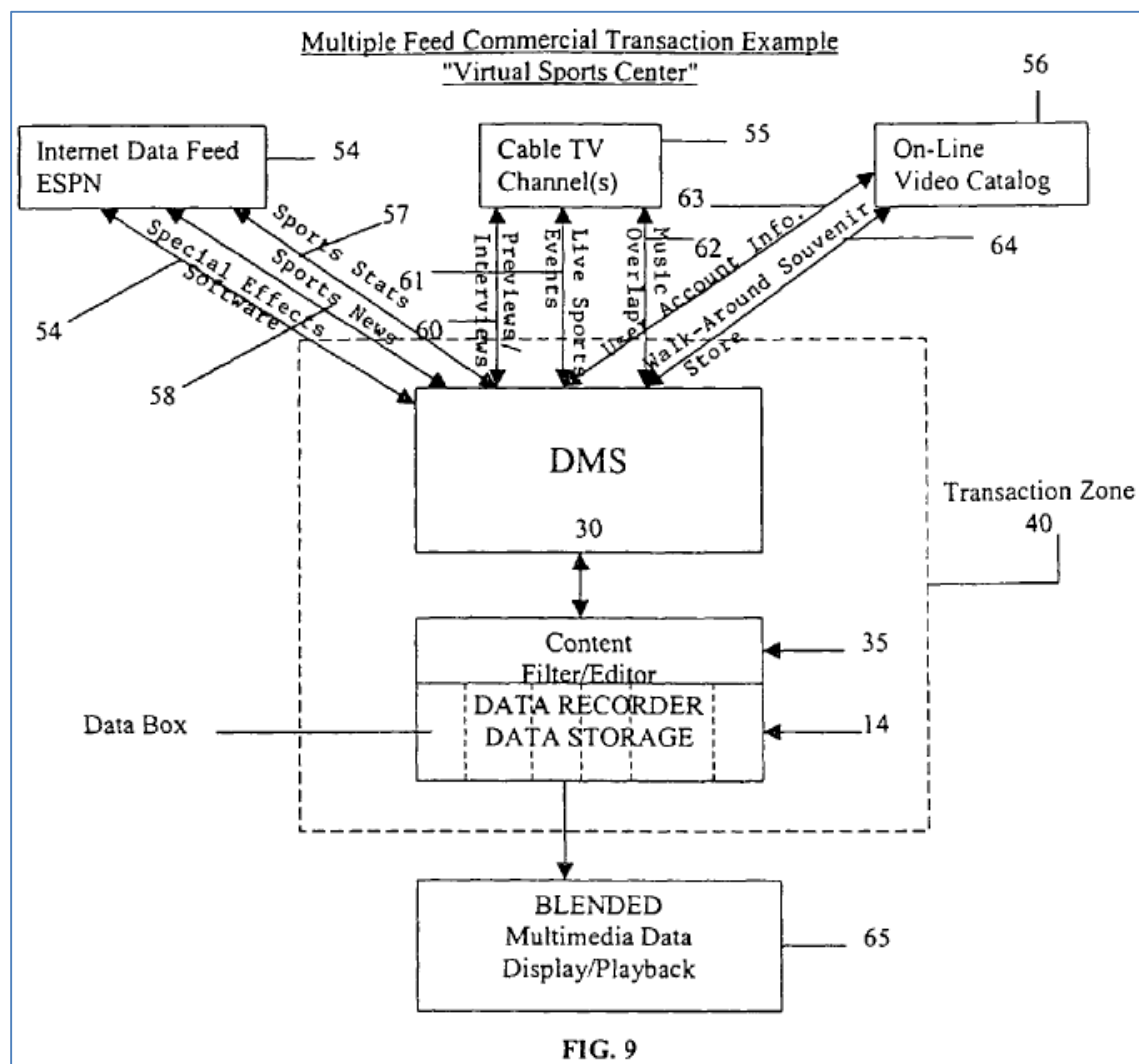
subsequent playback, processing or transfer” (see, for example, Ex. 1001 at 22:38-41, 22:62-65, FIG. 7).

74. The ‘090 and ‘494 Patents further describe this “non-movable storage device **14**” as “capable of being written to and read from virtually simultaneously to allow for immediate access to data while the local VPR/DMS **30** continues to record and/or process data” wherein a “typical medium for use as the built-in storage device **14** may include a single or multiple array of one or more high capacity random access memory devices, such as hard drives, but may also magneto-optical discs, and other re-recordable media” (see, for example, Ex. 1001 at 22:65-23:5, FIG. 7). Additionally, “As data is read from the storage device **14** it is transferred to the microprocessor **12** to be processed according to user input parameters” and/or “other processing functions, which may be accessed in microprocessor **12**” such as “a device or circuitry for data compression, expansion, and/or encoding” for subsequent transfer to a “playback circuit **27**” that comprises “signal decoders, digital-to-analog converters and digital outputs for transmitting the processed data to a proper playback device” (see, for example, Ex. 1001 at 23:10-12, 23:43-45, 23:54-59, FIG. 7).

75. The ‘090 and ‘494 Patents also disclose that it is “important” that “Data from the storage device **14** may be accessed for playback at the playback device **5** or for subsequent processing in the microprocessor **12**” because this

allows “the user to capture a data product according to his User Suitability Criteria, edit it by utilizing the content filter/editor, store it on the non-movable storage device **14**, and then watch a version edited by the microprocessor **12** to his specifications” (see, for example, Ex. 1001 at 25:10-17, FIG. 7).

76. Also in the “Detailed Description of the Invention” section for the ‘090 and ‘494 Patents; “FIG. 9” is described as a “schematic representation of the present invention illustrating the management of multiple feeds of data for commercial transactions” (see, for example, Ex. 1001 at 11:47-49, 28:48-50, FIG. 9 as reproduced herein).



77.

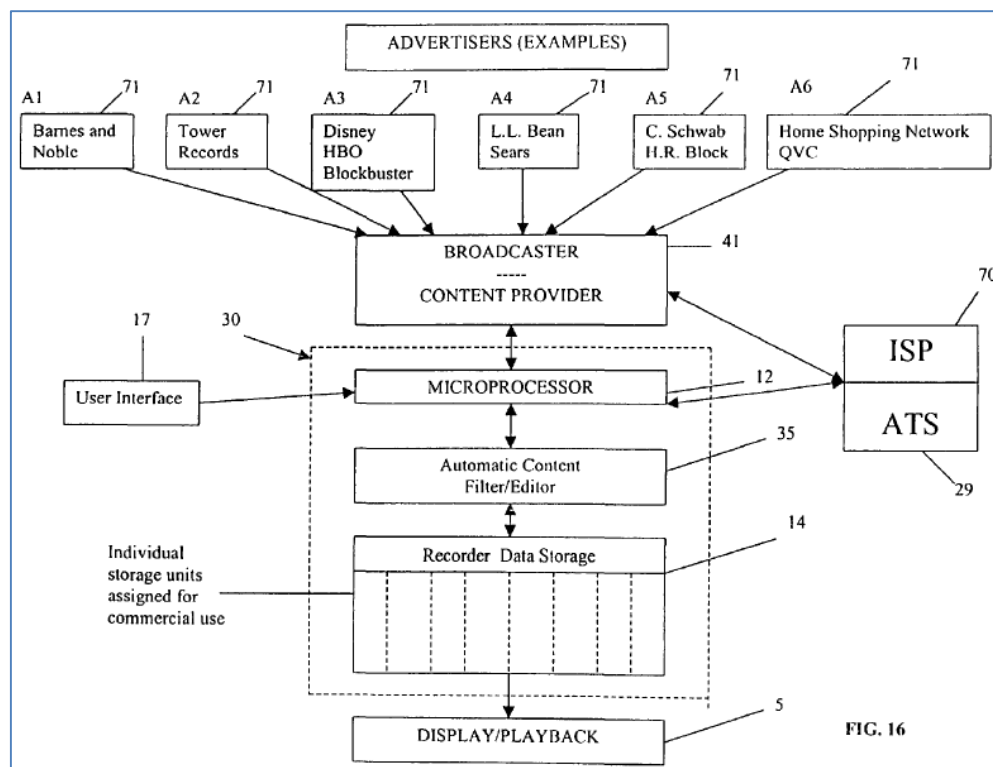
78. The '090 and '494 Patents disclose in reference to FIG. 9 that various exemplary "channels" can "communicate with the VPR/DMS 30 of the present invention" to "pass the information through the content filter/editor 35" that then "stores the information on the built-in, non-movable storage device 14 based on preprogrammed User Suitability Criteria" (see, for example, Ex. 1001 at 28:62-66, FIG. 9). Additionally, "If instructed, the data may be stored in an individual Data Box partition of the non-movable storage device 14" such that the "information

may then be blended into a Multimedia Data Display/Playback **65**, for the user's discretionary enjoyment” (see, for example, Ex. 1001 at 28:66-29:3, FIG. 9).

79. With reference to “FIG. 14,” the ‘090 and ‘494 Patents disclose that “broadcasts may include data having several optional story lines, optional advertising formats, and optional program preview formats” (see, for example, Ex. 1001 at 29:58-60, FIG. 14). The ‘090 and ‘494 Patents further describe that the “VPR/DMS” may be used by “individuals, family members, business associates, and public access applications” to “retrieve or order a customized edition of the program which has been processed by the system according to the individual's User Suitability Criteria for display, playback, and/or recording” and that such a “Recording of the customized program may be done in the Data Box partitions of the built-in storage device” (see, for example, Ex. 1001 at 30:17-29, FIG. 14). According to the 090 and ‘494 Patents, this “provides many new opportunities for broadcasters and content providers to transmit various editions of custom programs and custom targeted advertising data all contained within a single broadcast transmission” (see, for example, Ex. 1001 at 30:34-38, FIG. 14).

80. Also in the “Detailed Description of the Invention” section for the ‘090 and ‘494 Patents; “FIG. 16” is described as a “schematic representation of the present invention illustrating the communication pathways between advertisers, a broadcaster/content provider, system components/programming, and the non-

movable storage device” or a “schematic representing the present invention” that “illustrates the communication pathways between advertisers **71**, a broadcaster content provider **41**, and VPR/DMS components/programming” (see, for example, Ex. 1001 at 11:66-12:2, 30:60-63, FIG. 16 as reproduced herein).



81.

82. “FIG. 16” is the only figure that explicitly depicts “advertising” within the ‘090 and ‘494 Patents. According to the ‘090 and ‘494 Patents in reference to “FIG. 16,” the “VPR/DMS **30** system creates a new, unique, and ideally suited vehicle capable of managing the delivery of product advertising at the speed and efficiency available with existing electronic commerce systems, including the Internet” (see, for example, Ex. 1001 at 30:63-67, FIG. 16).

83. The ‘090 and ‘494 Patents assert that “In addition to delivery transactions involving digital data products (i.e. movies, premium, TV shows, video games and physical product catalogs), the VPR/DMS **30** system also provides multi-layered advertising formats with numerous advantages to both advertisers and consumers” and list several “advertising formats included in the VPR/DMS **30** of the present invention” (see, for example, Ex. 1001 at 31:18-33:22).

84. In particular, with regard to the asserted claims as described herein, the ‘090 and ‘494 Patents describe one of the “advertising formats” as “Programmable designation of advertising “sections” within VPR/DMS **30** internal storage areas” wherein “permanent or programmable “sections,” “data boxes” or “spaces” are monitored and controlled by both content providers (or VPR/DMS **30** central data base) as well as by end users according to pre-set or negotiable criteria” (see, for example, Ex. 1001 at 31:44-49). More specifically, the ‘090 and ‘494 Patents describe that such “advertising “sections” might be used for delivering advertising feeds, which are processed and recorded by VPR/DMS **30** system for real-time or subsequent viewing by end user” and that such “advertising data feeds might be mass distributed or broadcast to VPR/DMS **30** customers, or might be selectively distributed according to customer profiles, demographics, or other criteria” (see, for example, Ex. 1001 at 31:49-56).

85. The '090 and '494 Patents further describe in reference to these “advertising feeds” that “Profile criteria can be established through analysis of customer activity history from on-line monitoring” or alternatively from “customer information inquiries acquired directly through system interaction or from outside customer profile data sources,” thereby enabling “Advertising “sections” or “spaces” or “data boxes”” that “may be reserved, rented, leased or purchased from end user, content providers, broadcasters, cable/satellite distributor, or other data communications companies administering the data products and services” (see, for example, Ex. 1001 at 31:56-64).

86. With reference to “FIG. 16,” the '090 and '494 Patents disclose “advertisements which are delivered to the VPR/DMS **30** advertising “sections” can be customer specific by use of systems built-in signal decoding and the data content filter/editing algorithm” as “accomplished either by customer selection or by activity history monitoring” (see, for example, Ex. 1001 at 32:7-11).

Additionally, the '090 and '494 Patents disclose that “Selective recording of customer specific advertisements can be automatically processed and recorded onto the designated advertising “sections” of the VPR/DMS **30** system's internal storage areas” or “delivered through or onto other available advertising storage areas or monitoring channels of VPR/DMS **30** system” with an asserted “great advantage to both the advertiser and the VPR/DMS **30** customer for maximizing

content, establishing customer qualifications, and ultimately producing more cost efficient advertising for product and service providers” (see, for example, Ex. 1001 at 32:12-21).

87. Also with regard to the asserted claims as described herein, the ‘090 and ‘494 Patents describe one of the “advertising formats” in terms of a “capability of the VPR/DMS **30** system” to allow “for an entirely new method of processing, delivering, and managing advertising programs” (see, for example, Ex. 1001 at 32:22-24). More specifically, the ‘090 and ‘494 Patents describe that “Controlled through a VPR/DMS **30** central database (or other associated control database), prospective advertisers will be continuously updated by on-line data transmission into advertisers computer systems, and specific to a variety of customer profile data” wherein this data is “continuously retrieved, stored, and processed by VPR/DMS **30** central database through monitoring and service interactions with VPR/DMS **30** customers” (see, for example, Ex. 1001 at 32:28-35).

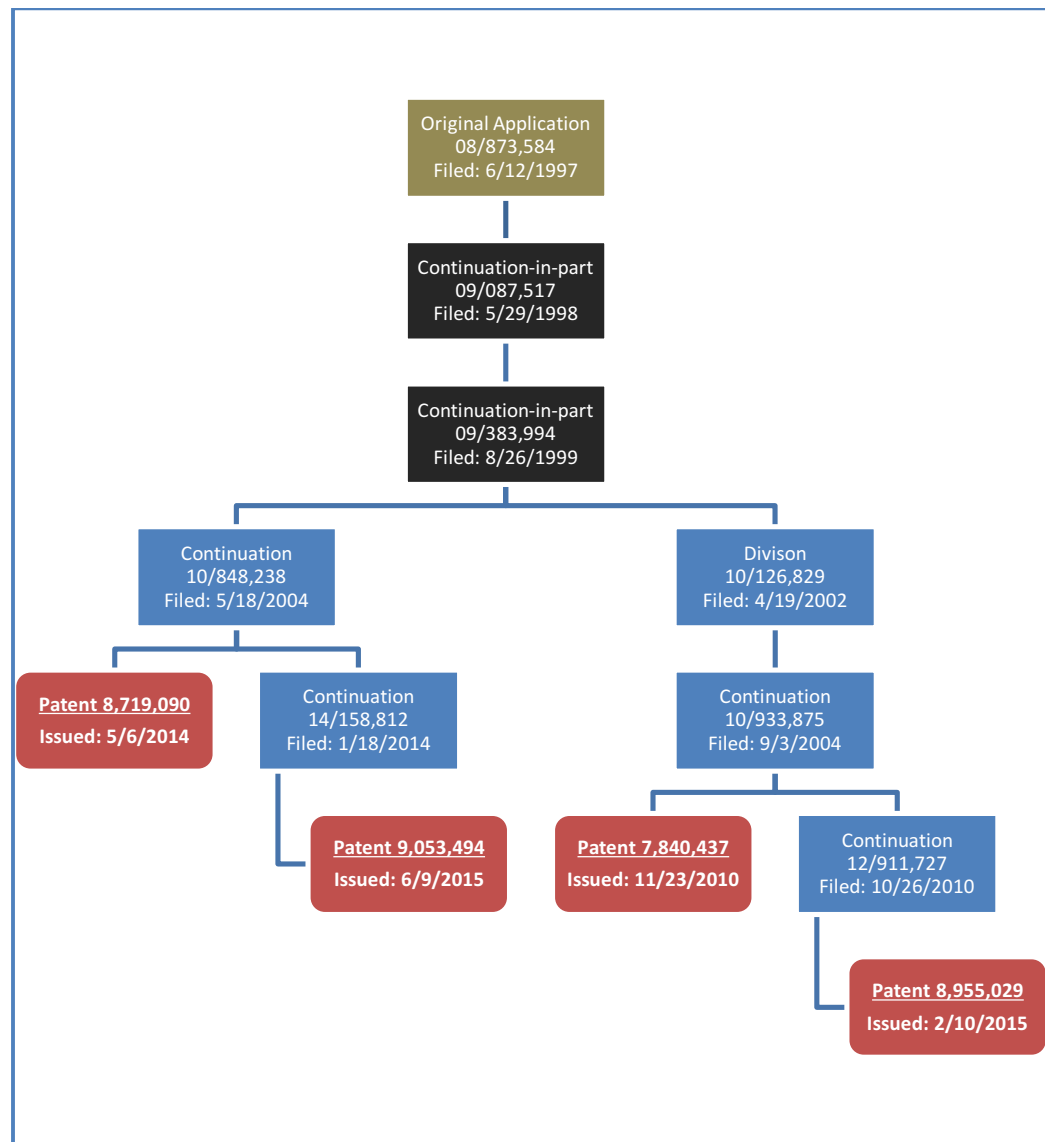
88. The ‘090 and ‘494 Patents further describe in reference to this “method of processing, delivering, and managing advertising programs” that “Pre-programmed or spontaneously programmed advertising format scenarios can be instantly analyzed and displayed or produced on advertiser's system by use with custom VPR/DMS **30** analysis software located at VPR/DMS **30** central data base or present with advertiser's systems” such that “Once all format decisions are made

by the advertiser, it may then place the desired advertising order for “instant” or scheduled delivery to VPR/DMS **30** customers” wherein such “instantaneous advertisement delivery” may be sent “via a VPR/DMS central data base and control center which may be located at the Content Provider's site **41** or on the remote ATS **29**” (see, for example, Ex. 1001 at 32:43-60).

89. Also in the “Detailed Description of the Invention” section for the ‘090 and ‘494 Patents, a section entitled “Data Box—Individual Storage Units” discloses that “the system's apparatus for capturing and processing multiple data feeds can be subdivided into multiple units for which a single user may assign various recording/processing functions to individual data box storage units for a multitude of purposes” wherein the user “may designate specific Data Boxes to automatically capture and process data feeds from such diverse sources as for network TV, satellite TV/music channels, cable transmissions, telephone communications, facsimile transmissions, Internet data, advertising data, subscriptions to on-line magazines, radio” and/or “may designate a partition in his individual Data Box to hold only advertising information which has been processed and customized according to his unique user suitability criteria” (see, for example, Ex. 1001 at 38:50-39:14).

B. Prosecution File History of the '090 and '494 Patents

90. A diagram that depicts the lineage of the original application, multiple continuations-in-part and multiple continuations that led to the issuance of the '090 and '494 Patents, as well two other related patents asserted in the District Court litigation, is given below.



91.

92. The original application, US Patent Application No. 08/873,584 (the “584 Application”), entitled “Multi-Functional Processing System With Built-In Non-Movable Storage Medium,” which was filed on June 12, 1997, comprised substantially less text and drawings than the application that eventually led to the issuance of the ‘090 and ‘494 Patents. For example, the ‘584 Application comprised only FIG. 1, 2a and 2b, and thus excluded at least FIGs. 3A-3I and 4-20, of the ‘090 and ‘494 Patents (compare, for example, Ex. 1005 at pp. 12-13, 30-33 with Ex. 1002 at pp. 86-104 and Ex. 1001 at 11:24-12:18, Figs. 1-20). The additional material that was disclosed in the ‘994 Application for the first time is also shown in red-line in Ex. 1012, which is a red-line comparison view between the ‘584 Application’s disclosure and the ‘994 Application’s disclosure. I believe that none of the originally filed claims in the ‘584 Application are amongst the issued and asserted claims of the ‘090 and ‘494 Patents (see, for example, Ex. 1005 at pp. 20-26, as compared to Ex. 1001 at 46:12-56:46 and Ex. 1003 at 46:13-54:27). I understand that each of the challenged claims of the ‘090 and ‘494 Patents recites at least one element that was disclosed for the first time in the ‘994 Application, such as advertising operations and storage in “advertising ‘sections’” (see, for example, Ex. 1012 at pp. 47-50). My understanding is that after multiple rejections by the PTO at least for anticipation and/or obviousness, there were no

claims issued as a U.S. patent directly from the ‘584 Application (see, for example, Ex. 1005 at p. 247).

93. The subsequent continuation-in-part application, US Patent Application No. 09/087,517 (the “’517 Application”), entitled “Multi-Functional Data Management System,” which was filed on May 29, 1998, comprised additional text and drawings relative to the original ‘584 Application but substantially less text and drawings than the application that eventually led to the issuance of the ‘090 and ‘494 Patents. For example, the ‘517 Application comprised only FIG. 1, 2a-b, 3a-d and 4-5, and thus excluded at least FIGs. 3E-3I and 6-20, of the ‘090 and ‘494 Patents (see, for example, Ex. 1006 at pp. 40-51). I believe that the single filed claim in the ‘517 Application is not amongst the issued and asserted claims of the ‘090 and ‘494 Patents (see, for example, Ex. 1006 at p. 36). My understanding is that after rejection by the PTO at least for anticipation of the single filed claim, there were no claims issued as a U.S. patent directly from the ‘517 Application (see, for example, Ex. 1006 at p. 105).

94. The second subsequent continuation-in-part application, U.S. Patent Application No. 09/383,994 (the “’994 Application”), entitled “System for data management and on-demand rental or purchase of digital data products,” which was filed on Aug. 26, 1999, comprised substantially similar text and drawings compared to the application that eventually led to the issuance of the ‘090 and ‘494

Patents. For example, the '994 Application comprised FIG. 1-20 of the '090 and '494 Patents (see, for example, Ex. 1007 at pp. 128-147). However, I believe that none of the originally filed claims in the '994 Application are amongst the issued and asserted claims of the '090 and '494 Patents (see, for example, Ex. 1007 at pp. 102-121). And my understanding is that after multiple rejections by the PTO at least for anticipation and/or obviousness, there were no claims issued as a US patent directly from the '994 Application (see, for example, Ex. 1007 at p. 345).

95. The subsequent continuation application, US Patent Application No. 10/848,238 (the "'238 Application"), entitled "System for data management and on-demand rental and purchase of digital data products," which was filed on May 18, 2004, is the application that eventually led to the issuance of the '090 Patent and via a second continuation application, US Patent Application No. 14/158,812 (the "'812 Application"), to the issuance of the '494 Patent.

96. The claims filed in 2004 in the '238 Application included one independent claim 1 that recited a "data delivery system" that comprised a "remote account transaction server" and a "programmable local receiver unit" (see, for example, Ex. 1002 at p. 76). However, in contrast with the eventual issued Claim 1 of the '090 Patent, this initial independent claim did not recite at least the eventual limitations regarding "advertising" and "individually controlled and reserved advertising data storage section" (see, for example, Ex. 1002 at p. 76).

On June 23, 2006, the claim set of the ‘238 Application was amended but the initial independent claim 1 remained unchanged (see, for example, Ex. 1002 at pp. 132-141).

97. On May 2, 2007, the PTO issued a non-final rejection of all then pending claims of the ‘238 Application (see, for example, Ex. 1002 at p. 151). Then-pending claim 1 and numerous other dependent claims were rejected as anticipated per 35 U.S.C. § 102(b) in view of U.S. Patent No. 5,721,827 (“Logan”) (Ex. 1021), which was filed on Oct. 2, 1996 and issued on Feb. 24, 1998 (see, for example, Ex. 1002 at p. 153-156). All of the then-pending claims of the ‘238 Application were rejected as obvious per 35 U.S.C. § 103(a) in view of U.S. Patent No. 5,758,257 (“Herz”) (Ex. 1020), which was filed on Nov. 29, 1994 and issued on May 26, 1998 further in view of Logan (see, for example, Ex. 1002 at p. 153-156).

98. More specifically, in the non-final rejection of May 2, 2007, the PTO identified the “host computer **101**” and the “player **103**” of Logan as respectively the “remote account transaction server” and the “programmable local receiver unit” of then-pending claim 1 of the ‘238 Application (see, for example, Ex. 1002 at pp. 154-155). These elements can be seen in the following annotated version of FIG. 1 from Logan:

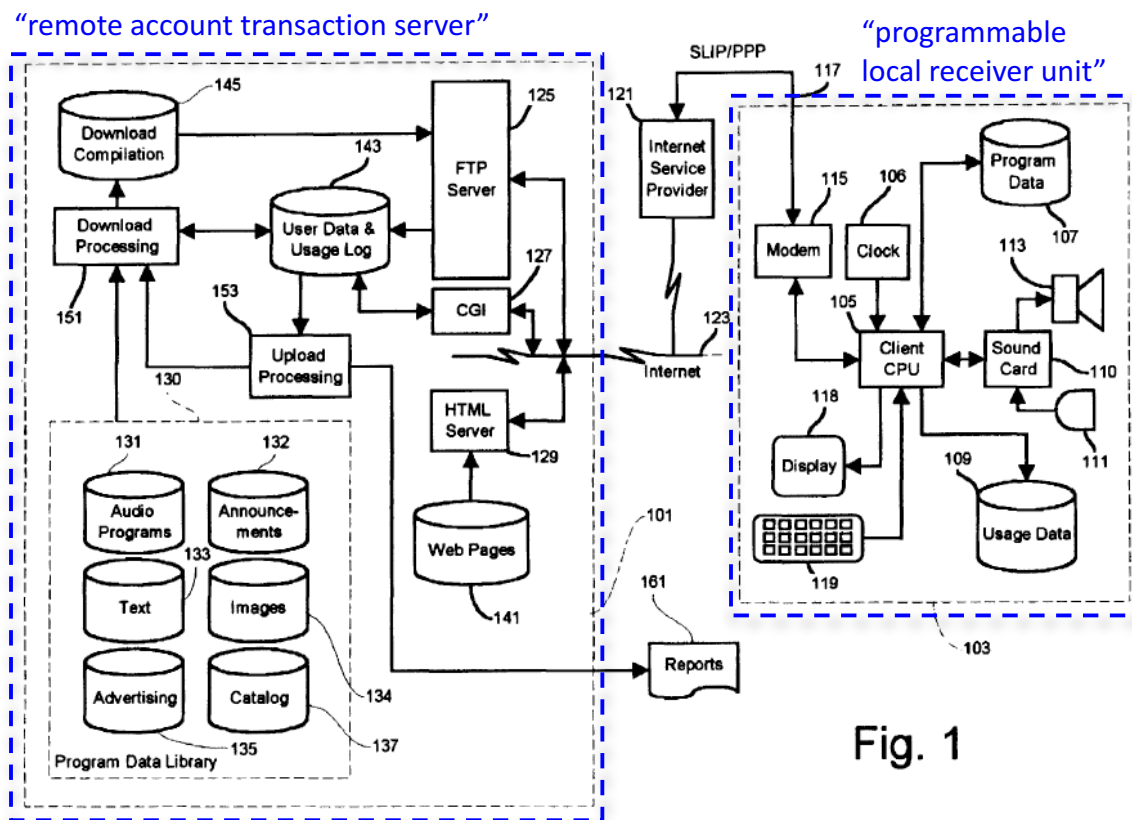


Fig. 1

99.

100. On Nov. 2, 2007, applicant responded to the non-final rejection of May 2, 2007 with remarks and significant claim amendments (see, for example, Ex. 1002 at pp. 160-172). In particular, then-pending claim 1 of the '238 Application added a limitation of "at least one of the multimedia data products being advertising data" to the "remote account transaction server" claim element and added a limitation of "said programmable local receiver unit including a data storage area having designatable [sic] individual advertising data storage sections monitored and controlled by one of the remote account transaction server and the programmable local receiver, according to preset criteria, reserved for storing

advertising data” to the “programmable local receiver unit” claim element (see, for example, Ex. 1002 at p. 161).

101. The applicant remarked on Nov. 2, 2007 that “Claim 1 has been amended to direct it to the inclusion in applicant's system of designated individual advertising data storage sections reserved for storing advertising data” and that “None of the cited prior art includes or suggests a system where specific storage sections of the local receiver unit are designated as advertising storage sections and are then reserved specifically for storage of advertising data” (emphasis added, see, for example, Ex. 1002 at pp. 170-171). Applicant specifically distinguished between “both Logan et al. and Herz et al.” where applicant alleges “all storage can be used for any type of data storage” versus “applicant's system where specific advertising storage sections are provided” and thus “there is always storage provided for advertising data” (see, for example, Ex. 1002 at p. 171). Applicant did not dispute that either of Logan or Herz were prior art to the ‘238 Application, nor that PTO’s designation of Logan as prior art per 35 U.S.C. § 102(b) was incorrect (see, for example, Ex. 1002 at pp. 170-172).

102. On Jan. 31, 2008, the PTO issued a final rejection of all then pending claims of the ‘238 Application (see, for example, Ex. 1002 at p. 177). As with the earlier non-final rejection, the PTO rejected the amended claims again in view of Logan per 35 U.S.C. § 102(b) or in view of Herz and Logan per 35 U.S.C. § 103(a)

(see, for example, Ex. 1002 at pp. 178-181). More specifically, the PTO cited to Logan's "Advertisements Table **311** containing entries which describe advertising program segments to be brought to the attention of the subscriber" for the amended claim 1 limitation of "data storage area" and further to "inherency" with respect to the recited limitation of "having designatable individual advertising data storage sections" (see, for example, Ex. 1002 at p. 180).

103. On Jun. 8, 2008, applicant responded to the final rejection of Jan. 31, 2008 and noted that "storage sections for storing advertising may or may not exist and can be located anywhere in Logan et al.'s data storage area" such that "There are no specific dedicated storage sections or addresses in which to store the advertising" in apparent contrast to applicant's view of then-pending claim 1 of the '238 Application (see, for example, Ex. 1002 at p. 218).

104. On Jun. 30, 2008, applicant filed a Request for Continued Examination and further told the PTO "Applicant amends Claim 1 to add means creating within the data storage area individual advertising data storage sections and said means reserving such advertising data storage sections specifically for storing advertising data" and alleged that "This adds a structural limitation to Claim 1 requiring a structural means to accomplish this creation and dedication of advertising data storage sections" (emphasis in original, see, for example, Ex. 1002 at pp. 230, 243).

105. On Sep. 9, 2008, the PTO issued a non-final final rejection of all then pending claims of the '238 Application (see, for example, Ex. 1002 at p. 251). In particular, the PTO rejected the newly amended claim 1 as indefinite per 35 U.S.C. § 112, ¶ 6 because “There is no explicit recitation in the specification of any physical structures to perform the functions of the means-plus-function limitations in the claims. Para. [0186] and [0187] of the published application (US 20050144641A1) disclose reserving "advertising sections or spaces," but does not recite any physical structures to perform the function” (see, for example, Ex. 1002 at pp. 252-253).

106. Furthermore, in this Sep. 9, 2008 non-final rejection, the PTO also rejected all claims per 35 U.S.C. § 103(a) in view of Herz, Logan and U.S. Patent No. 6,067,107 (“Travailleur”) (Ex. 1022), which was filed on Apr. 30, 1998 and issued on May 23, 2000 (see, for example, Ex. 1002 at p. 253). The PTO stated that “Travailleur et al. teaches reserving memory sections based on priority (last four lines of Abstract), which reads on ‘means reserving such advertising data storage sections’” and “Because this permits allocation of limited memory capacity based on its best use, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to add the teachings of Travailleur et al. to those of Herz et al. and Logan et al.” (emphasis in original, see, for example, Ex. 1002 at p. 254).

107. On Dec. 9, 2008, applicant responded to the non-final rejection of Sep. 9, 2008 and again amended then-pending claim 1 of the '238 Application to remove the "means for" limitation and to add a limitation of "memory divided into a plurality of individually controlled storage sections, at least one of the plurality of individually controlled storage sections being reserved as an advertising data storage section specifically for storing advertising data" (see, for example, Ex. 1002 at p. 262). According to remarks from the applicant, "Applicant's claimed system requires having a memory for the data transmitted from the head-end and having at least one advertising storage section in that memory specifically reserved for advertising data transmitted from the head-end" and "Applicant's advertising storage section has nothing to do with data to be returned from the viewer to the head-end" (see, for example, Ex. 1002 at p. 275). Applicant also alleges with respect to its "claimed system" that "it does not have a priority setting function for all data to be stored in the memory as in Travaille et al." and therefore "It provides for specifically dedicating a section of the memory for storage of advertising data as opposed to other programming data, regardless of whether or not the other programming data may have a higher priority in some priority scheme" (see, for example, Ex. 1002 at pp. 275-276). The applicant did not dispute that Travaille was prior art to the '238 Application (see, for example, Ex. 1002 at pp. 273-276).

108. On Mar. 17, 2009, the PTO issued a final rejection of all then pending claims of the ‘238 Application (see, for example, Ex. 1002 at p. 281). Again, the PTO rejected the amended claims again in view of Herz and Logan per 35 U.S.C. § 103(a) (see, for example, Ex. 1002 at pp. 282-283). With respect to the newly amended claim 1 limitation, the PTO wrote that “Logan et al. also teaches said programmable local receiver unit including memory divided into a plurality of individually controlled storage sections” (see, for example, Ex. 1002 at p. 283). The PTO also specifically noted “the Travaille reference is no longer necessary because applicant has amended to introduce non-structural claim language, which does not limit the claims” (see, for example, Ex. 1002 at p. 284).

109. On Sep. 22, 2009, applicant filed a Request for Continued Examination (see, for example, Ex. 1002 at p. 310). Applicant amended claim 1 of the ‘238 Application again on Oct. 21, 2009, and further told the PTO that as amended this “language requires “an advertising data storage section” (a structural element)” that is “adapted specifically for storing only the specifically identified advertising data” such that “the programmable local receiver unit is structured to limit access to the advertising data storage section to only the specifically identified advertising data” (see, for example, Ex. 1002 at pp. 314-315, 322). Applicant also added two new method claims 60 and 61 to the ‘238 Application (see, for example, Ex. 1002 at pp. 332-333).

110. On Mar. 18, 2010, the PTO issued a non-final final rejection of all then pending claims of the ‘238 Application (see, for example, Ex. 1002 at p. 336). In particular, the PTO rejected the newly added method claims 60 and 61 to the ‘238 Application as “not directed to statutory subject matter” per 35 U.S.C. § 101 because “the only steps in the claims, "providing," "dividing," "reserving" and "monitoring," are merely insignificant extra-solution activity” (see, for example, Ex. 1002 at p. 337). Additionally, the PTO rejected all other claims of the ‘238 Application per 35 U.S.C. § 112 for lack of written description because the limitation ““to store only the specifically identified advertising data" is new matter” at least since “The negative limitation "only" has no basis in the original disclosure” (see, for example, Ex. 1002 at p. 338). The PTO also rejected these other claims as obvious in view of Herz and Logan per 35 U.S.C. § 103(a) due to inherency “to the functioning of any computer memory” (see, for example, Ex. 1002 at pp. 338-340).

111. On Jun. 18, 2010, the applicant alleged to the PTO in remarks that method claims 60 and 61 “do define patentable subject matter,” that the “only” limitation has written description support in ¶¶ 21, 186 and 187 of the ‘238 Application in view of dictionary definitions for “reserved” and “designate,” and that Herz and Logan do not render obvious the system claims (see, for example, Ex. 1002 at pp. 363-369). In particular, the applicant describes the storage section

limitations as “These structurally separate data storage boxes or sections of memory for storing the data they were created for, e.g. advertising data storage sections created to store only advertising data, are not taught or suggested by the cited prior art or cited combinations of prior art” (emphasis added, see, for example, Ex. 1002 at p. 369).

112. On Jul. 1, 2010, the PTO issued a final rejection of all pending claims in the ‘238 Application that effectively re-iterated the same points as the previous non-final rejection after considering the applicant’s recent remarks (see, for example, Ex. 1002 at pp. 373-381).

113. On Jan. 3, 2011, the applicant filed a Request for Continued Examination (see, for example, Ex. 1002 at p. 387). Applicant amended claim 1 of the ‘238 Application to the form that eventually became issued Claim 1 of the ‘090 Patent (see, for example, Ex. 1002 at p. 404). Applicant also told the PTO that “the downloaded data taught by Logan is simply stored in a storage device in a random fashion or in whatever memory locations are available” such that “The data is not stored in any particular memory location, let alone an individually controlled and reserved storage section” (see, for example, Ex. 1002 at p. 400).

114. On Jul. 10, 2013, the PTO issued a Notice of Allowability for the ‘238 Application (see, for example, Ex. 1002 at p. 430). This allowance was made in view of certain “Interpretation of Claim Language” provisions (see, for example,

Ex. 1002 at p. 432). For example, the allowance assumes that “**Advertising data** is disclosed (spec. para. [0173] and [0186]) to be promotional information provided in a special way ("targeted" or "specifically identified") for consumption by the end user. Here, by definition, advertising data is the information placed in one or more **reserved storage sections**” (emphasis in original, see, for example, Ex. 1002 at pp. 432-33). Also, the allowance assumes that “A **reserved storage section** has been defined in the instant application to mean an allocation or **assignment** of a uniquely identified portion of computer memory (spec. para. [0186] and Microsoft Press Computer Dictionary definition of "storage location")” (emphasis in original, see, for example, Ex. 1002 at p. 432).

115. This Jul. 10, 2013 allowance also states that Herz in view of Logan does not render obvious the claims of the ‘238 Application because neither reference teaches the limitation of “at least one data storage **section** being **reserved for advertising data** storage” in view of the above-recited “Interpretation of Claim Language” (emphasis in original, see, for example, Ex. 1002 at p. 433). However, the PTO explicitly states that “Marsh *et al.* (US 6,876,974 B1) teaches this limitation, literally as, *a designated portion of the storage device 206 having a predetermined memory capacity (e.g., 10 MB) which is specifically reserved for storage of advertisements at the time the client system software is installed*” (emphasis in original, see, for example, Ex. 1002 at p. 433).

Even though Herz, Logan and U.S. Patent No. 6,876,974 (“Marsh”) (Ex. 1023), which was filed on Dec. 7, 1998 with priority to Apr. 19, 1996 and issued on Apr. 5, 2005, recite all limitations of the allowed claims of the ‘238 Application, the PTO also states in reference to Marsh, “There is no basis upon which one of ordinary skill in the art would have found it obvious, at the time of the invention, to add this specialized teaching to those of Herz and Logan” (see, for example, Ex. 1002 at p. 433).

116. On Oct. 2, 2013, applicant and PTO met to consider additional claims that could be added for expedited consideration to the ‘238 Application (see, for example, Ex. 1002 at p. 455). PTO informed applicant that the proposed claim “A device for the delivery of targeted digital advertising data, comprising: a programmable receiver comprising at least one addressable and reserved data storage section for storing digital advertising data, wherein said programmable receiver is configured to receive digital advertising data, to store digital advertising data in said at least one advertising data storage section, and to make targeted digital advertising data available to an end user” would be anticipated by Marsh (see, for example, Ex. 1002 at p. 455). Such claim was not pursued and on Apr. 16, 2014, the PTO provided a notification that the ‘238 Application would issue May 6, 2014 as the ‘090 Patent (see, for example, Ex. 1002 at p. 530).

117. On Jan. 18, 2014, US Patent Application No. 14/158,812 (the “‘812 Application”) was filed (see, for example, Ex. 1004 at p. 132). On Jul. 30, 2014, applicant filed a preliminary amendment that included the claims that became the issued claims of the ‘494 Patent (see, for example, Ex. 1004 at pp. 148-162). On Sep. 3, 2014, applicant filed a terminal disclaimer to the ‘090 Patent for these claims that became the issued claims of the ‘494 Patent (see, for example, Ex. 1004 at p. 180).

118. On Sep. 12, 2014, PTO issued a Notice of Allowability for the ‘812 Application (see, for example, Ex. 1004 at p. 204). This allowance was made with an explanation of the “Interpretation of Claim Language” provided by the PTO (see, for example, Ex. 1004 at p. 205). With respect to the terms “advertising data” and “reserved storage section,” the allowance for the ‘812 Application was the same as for the ‘238 Application (see, for example, ¶ 114 above and Ex. 1004 at pp. 205-206). However, the PTO specifically equated the claim term “reserved storage section(s)” (and its variants) of the ‘238 Application with the claim term “reserved storage space” (and its variants) in the ‘812 Application and the claim term “specifically identified advertising data” of the ‘238 Application with the claim term “particular advertising data” in the ‘812 Application (see, for example, Ex. 1004 at p. 207). Additionally, the PTO specifically equated the claim term “predefined criteria data” in the ‘812 Application with any of the ten factors listed

in Claim 83 of the ‘090 Patent, or thus “total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness” (see, for example, Ex. 1001 at 53:19-23 and Ex. 1004 at p. 207).

119. Similarly, with respect to allowance in view of Logan, Herz, and Marsh, the allowance for the ‘812 Application was the same as for the ‘238 Application (see, for example, ¶ 114 above and Ex. 1004 at p. 207). However, the allowance for the ‘812 Application also notes that U.S. Patent No. 8,484,677 (“Eldering”), which was filed on Jun. 9, 2011 with priority to Dec. 3, 1998 and issued on Jul. 9, 2013, discloses to a POSITA the “reserved storage space” limitation (see, for example, Ex. 1004 at p. 207-208).

120. On May 20, 2015, the PTO provided a notification that the ‘812 Application would issue Jun. 9, 2015 as the ‘494 Patent (see, for example, Ex. 1004 at p. 282).

C. Asserted Claims and Priority Date

121. The ‘090 Patent includes 106 claims. I understand that Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 are asserted in the District Court litigation and are the subject of the Covered Business Method Review petition. Note that for the

sole purposes of my analyses herein, I have denoted certain elements of Claim 1 as (a), (b), etc. even though such nomenclature does not appear in the '494 Patent.

122. The '494 Patent includes 65 claims. I understand that Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 are asserted in the District Court litigation. Note that for the sole purposes of my analyses herein, I have denoted certain elements of Claims 1, 19 and 33 as (a), (b), etc., even though such nomenclature does not appear in the '494 Patent.

123. I understand that in the District Court litigation that the Patent Owner alleges the priority date of the '090 and '494 Patents to be June 12, 1997 (see, for example, Ex. 1016 at p. 7).

124. I understand further that in response to an interrogatory on the topic of priority date of the '090 and '494 Patents that Patent Owner re-affirms the allegation that the priority date of the '090 and '494 Patents is June 12, 1997 with citation solely to application documents within the file history (see, for example, Ex. 1017 at pp. 9-11). Patent Owner provides no identification for any element of any of the asserted claims of the '090 and '494 Patents to show written description support for each claim element of such claims within the '584 Application that was filed June 12, 1997 (see, for example, Ex. 1017 at pp. 9-11).

125. In my opinion, to the extent that any asserted claim of the '090 and '494 Patents is considered to have written description support at all, the earliest

priority date for either of the ‘090 and ‘494 Patents must be the filing date of the ‘994 Application continuation-in-part, or thus Aug. 26, 1999 (see, for example, Ex. 1001 at [63] or 1:8-12), for at least the following reasons.

126. First, Patent Owner has not provided any specific technical basis for its alleged priority date of June 12, 1997 (see ¶ 124 above). To the extent that Patent Owner provides any specific technical basis to show why each element of the asserted claims of the ‘090 and ‘494 Patents has written description support in the ‘584 Application that was filed June 12, 1997, I reserve the right to supplement my analyses and conclusions provided herein.

127. Second, my analysis of the ‘584 Application that was filed June 12, 1997 finds no written description support for multiple limitations of the asserted claims of the ‘090 and ‘494 Patents such as, for example only, “advertising data” or “reserved storage” as relied upon by the PTO to allow these claims in view of the prior art (see, for example, ¶¶ 92, 114 above).

128. Third, my analysis of the ‘517 Application that was filed May 29, 1998 finds no written description support for multiple limitations of the asserted claims of the ‘090 and ‘494 Patents such as, for example only, “advertising data” or “reserved storage” as relied upon by the PTO to allow these claims in view of the prior art (see, for example, ¶ 114 above).

129. Fourth, the PTO rejected claims of the ‘238 Application per 35 U.S.C. § 102(b) in view of U.S. Patent No. 5,721,827 (“Logan”) (Ex. 1021), which was filed on Oct. 2, 1996 and issued on Feb. 24, 1998, which indicates that the PTO considered Feb. 24, 1998 to be more than 1 year before the priority date of the ‘090 and ‘494 Patents (see, for example, ¶ 97 above).

130. Fifth, the PTO rejected claims of the ‘238 Application per 35 U.S.C. § 103(a) in view of U.S. Patent No. 6,067,107 (“Travaille”) (Ex. 1022), which was filed on Apr. 30, 1998 and issued on May 23, 2000, which indicates that the PTO considered Apr. 30, 1998 to be before the priority date of the ‘090 and ‘494 Patents (see, for example, ¶ 106 above).

131. Sixth, the PTO identified U.S. Patent No. 8,484,677 (“Eldering”), which was filed on Jun. 9, 2011 with priority to Dec. 3, 1998 and issued on Jul. 9, 2013 as prior art in considering allowance of the ‘812 Application that matured into the ‘494 Patent, which indicates that the PTO considered Dec. 3, 1998 to be before the priority date of the ‘090 and ‘494 Patents (see, for example, ¶ 119 above).

132. Seventh, the PTO specifically cited “1999” as the “time of invention” in reference to the ‘238 Application that became the ‘090 Patent without objection by the applicant (see, for example, Ex. 1002 at p. 433).

133. Eighth, the applicant for the ‘238 Application that eventually matured into the ‘090 and ‘494 Patents did not dispute the PTO’s assumption that the priority date for the ‘090 and ‘494 Patents should be earlier than the filing date of the predecessor ‘994 Application despite multiple such opportunities to do so (see, for example, ¶¶ 101 and 107 above).

D. Objective Indicia of Non-obviousness

134. I understand that in the District Court litigation, Patent Owner was provided the following interrogatory with respect to this topic:

Interrogatory No. 1:

Separately for each Asserted Claim, identify any objective evidence or secondary considerations of non-obviousness (e.g., commercial success, long-felt need, commercial acquiescence, expressions of skepticism, copying, teaching away, failed attempts by others, or simultaneous development), and for each such objective evidence or secondary consideration of non-obviousness, describe in detail the facts underlying the alleged objective evidence or secondary consideration of non-obviousness and identify each person with knowledge of such facts.

135.

136. Other than objections and reservation of rights to amend, the Patent Owner’s response was “Non-obviousness of the inventions claimed in the patents-in-suit are supported by secondary considerations including at least commercial success, long-felt need, cost saving the inventions have produced, copying by others, and licensing by others. Facts supporting such secondary considerations include DISH’s adoption, use, sales, and promotion of the inventions in its products and services, as outlined in Customedia’s Infringement Contentions and supporting charts and exhibits, which are hereby incorporated by reference (emphasis added, see, for example, Ex. 1018 at pp. 7-8).

137. Thus, the only specific evidence that Patent Owner provides of objective indicia of non-obviousness is that Patent Owner believes that Petitioner's products and services infringe each asserted claim of the '090 and '494 Patents per Patent Owner's infringement contentions (see Ex. 1018 at pp. 6-8) and that the success of Petitioner's products and services is linked to such alleged infringement (for which Patent Owner provides no basis for such an alleged linkage).

138. In my opinion, Patent Owner has not shown any linkage between the success of Petitioner's products and services and the asserted claims of the '090 and '494 Patents.

139. However, since Patent Owner believes that Patent Owner's infringement contentions are relevant to an obviousness analysis of the '090 and '494 Patents (see, for example, Ex. 1018 at pp. 7-8), then such contentions should also be considered instructive herein to determine Patent Owner's standards for meeting certain claim limitations.

140. To the extent that Patent Owner (or Patent Owner's expert) amends, updates or supplements Patent Owner's position on objective indicia of non-obviousness, I reserve the right to supplement my analyses and opinions herein.

VI. CLAIM CONSTRUCTION

141. I understand that claim construction is a matter of law. However, I understand that in a review proceeding the claims are to be given their broadest reasonable interpretation consistent with the ‘090 and ‘494 Patent specifications and file histories, and that claim terms are to be given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art in the context of the entire disclosure and intrinsic record. I also understand that limitations from the specification are not to be read into the claims. The specification, however, can inform a person of ordinary skill in the art as to the broadest reasonable interpretation of the claims.

142. In addition, I understand that a person of ordinary skill in the art would look to explanations and arguments made by the applicants during their prosecution file histories to inform as to the broadest reasonable interpretation of the claims of the ‘090 and ‘494 Patents. I further understand that the broadest reasonable interpretation of the claims as appropriate for a review proceeding may be different from that of the construction of such claims (or terms therein) as appropriate in a District Court litigation.

143. The term “**multimedia data products**” appears in Claims 1 and 2 of the ‘090 Patent. The term “multimedia data product” does not appear in any of the original ‘584 Application from 1997, the first continuation-in-part ‘517

Application in 1998, or the second continuation-in-part ‘994 Application in 1999. However, in my opinion, a person of ordinary skill in the art (“POSITA”) would understand the term “multimedia” as having an ordinary meaning in the art as a reference to at least two media types amongst video, audio, text, images, etc., as also consistent with descriptions in the ‘090 Patent (see, for example, Ex. 1001 at 4:63-64, 7:9-12, 11:30-33, 15:34-35, 18:7-7, 22:8-12, 29:19-22, 32:54-55, 33:14-16, 33:18-20, 34:65-67). In contrast to the originally filed claims reciting “digital data products” (emphasis added, see, for example, Ex. 1007 at p. 95), the ‘090 Patent’s claims reciting “data products” that are “multimedia” can be either “analog” or “digital” in origin as consistent with descriptions in the ‘090 Patent (see, for example, Ex. 1001 at 5:5-9, 7:4-8, 12:30-33, 22:38-44, 24:3-10, 26:29-38, 27:42-44). Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “multimedia data products” to be “content consisting of at least two media types such as video, audio, images or text”.

144. The term “**individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data**” appears in Claim 1 of the ‘090 Patent. As described in greater detail above, the prosecution file history for the ‘238 Application that eventually became the ‘090 Patent was substantially influenced by the applicant’s views on

this term and the PTO's eventual interpretation based on applicant's views that were critical to allowance of any claims of the '090 Patent in view of the file history prior art (see, for example, ¶¶ 101, 103, 104, 107, 109, 111, 113, and 114 above). Thus, in my opinion, the broadest reasonable interpretation of this claim term, and other variants thereof within the asserted claims of the '090 and '494 Patents, must be deduced from the various specific statements that the applicant made during the prosecution file history.

145. For example, applicant told the PTO that in contrast to cited prior art that his invention recites “a structural limitation for the receiver which requires that structurally the receiver serves at least one of the plurality of storage sections just for storing advertising data” which “means that the programmable local receiver unit is configured or structured to limit access to at least one of the storage sections of the memory to just advertising data” (emphasis added, see, for example, Ex. 1002 at p. 302). Similarly, applicant told the PTO that in contrast to cited prior art that “to ‘**reserve**’ a memory space for advertising data would mean to a person skilled in the art that such memory space is kept for only advertising data and only for that advertising data for which the specific storage space is ‘reserved’” (emphasis added, see, for example, Ex. 1002 at p. 365).

146. Furthermore, applicant told the PTO that in contrast to cited prior art that his invention is “able to retrieve such advertising from dedicated storage

sections having a preset range of addresses” (emphasis added, see, for example, Ex. 1002 at p. 197). Specifically, during prosecution, applicant stated: “the language ‘at least one of the plurality of individually controlled storage sections being reserved as an advertising data storage section specifically for storing advertising data’ recites a structural limitation for the receiver which requires that structurally the receiver reserves at least one of the plurality of storage sections just for storing advertising data. This means that the programmable local receiver unit is configured or structured to limit access to at least one of the storage sections of the memory to just advertising data. One of the storage sections is structurally set aside for advertising data” (see, for example, Ex. 1002 at p. 302). To summarize, in the prosecution file history, applicant has specifically distinguished his invention with respect to what in the ‘090 Patent became the term “reserved advertising data storage section” by identifying data storage section that are “set” apart from other storage space by being “just for storing advertising data”. Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data” to be “individually controlled data storage section set apart just for storing advertising data”.

147. The term “**customer specific advertising data**” appears in Claims 3-5, 17 and 23 of the ‘090 Patent. The term “customer specific advertising data” does not appear in any of the original ‘584 Application from 1997, the first continuation-in-part ‘517 Application in 1998, or the second continuation-in-part ‘994 Application in 1999. This term appears in Claims 3 and 5 of the ‘090 Patent as a type of “specifically identified advertising data”. The term “specifically identified advertising data” also does not appear in any of the original ‘584 Application from 1997, the first continuation-in-part ‘517 Application in 1998, or the second continuation-in-part ‘994 Application in 1999. Although, in my opinion, a POSITA would understand the term “advertising data” as having an ordinary meaning in the art as a reference to information or media content associated with advertising, as also consistent with descriptions in the ‘090 Patent (see, for example, Ex. 1001 at 31:3-4, 32:54-57), the file history shows that the PTO allowed these claims in view of the term “advertising data” as “promotional information provided in a special way (“targeted” or “specifically identified”) for consumption by the end user” (see, for example, ¶ 114 above). Additionally, in my opinion, a POSITA would understand the term “specifically identified” when applied to “advertising data” as having an ordinary meaning in the art as a reference to using an identifier or code to select particular “advertising data” in contrast to other such unselected “advertising data,” as also consistent with

descriptions in the '090 Patent (see, for example, Ex. 1001 at 31:52-56, 32:7-15). Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “specifically identified advertising data” to be “promotional content consisting of at least two media types that is distinguished from other data types by a particular identifier or selection code.” In my opinion, a POSITA would understand the term “customer specific” when applied to “advertising data” as having an ordinary meaning in the art as a reference to a specific customer, as also consistent with descriptions in the '090 Patent (see, for example, Ex. 1001 at 31:52-60, 32:7-15). Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “customer specific advertising data” to be “promotional content consisting of at least two media types that is targeted for consumption by a specific customer or end user by a particular identifier or selection code.”

148. The term “**user suitability criteria**” appears in Claims 3 and 23 of the '090 Patent. The term “user suitability criteria” does not appear in either of the original '584 Application from 1997 or the first continuation-in-part '517 Application in 1998, but this term is introduced in the second continuation-in-part '994 Application in 1999. According to the '994 Application (or the '090 and '494 Patents), a “user” may generally select “‘User Suitability Criteria’, which may be defined as a program name, theme, genre, favorite actors or actresses, directors,

producers or other parameters, such as key words, television/motion picture rating, etc.” such that “The User Suitability Criteria may be used alone or in combination, and can be used to either select or prohibit programming to be recorded” (emphasis added, see, for example, Ex. 1001 at 5:57-65). More specifically with respect to “advertising,” the ‘994 Application (or the ‘090 and ‘494 Patents) inform that “The user may designate a partition in his individual Data Box to hold only advertising information which has been processed and customized according to his unique user suitability criteria” wherein “This information may be communicated back to the broadcaster/content provider to allow advertising or video catalogues sent to the user to be more on target as to the user's preferences” (emphasis added, see, for example, Ex. 1001 at 39:10-16). In my opinion, a POSITA would understand the term “user suitability criteria” whether applied to “advertising data” or other types of “multimedia” information or content as having an ordinary meaning in the art as a reference to user-specific preferences for particular content characteristics, as also consistent with descriptions in the ‘090 Patent (see, for example, Ex. 1001 at 5:57-65, 6:17-22, 16:44-61, 25:57-62, 33:4-16, 39:10-16). Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “user suitability criteria” to be “content-based filter preferences set by the user”.

149. The terms “**automatic**” and “**automatically**” appears in Claims 1, 5, 6 and 23 of the ‘090 Patent. In my opinion, a POSITA would understand “automatically” as a common term of art for content delivery system and would consider a contemporaneous IEEE definition for “automatic” as “Pertaining to a function, operation, process, or device that, under specified conditions, functions without intervention by a human operator” to be informative (see, for example, Ex. 1024 at p. 6). Thus, for the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim terms “automatic” and “automatically” to be “without human intervention”.

150. The term “**multimedia content**” appears in Claims 1 and 33 of the ‘494 Patent, and “**multimedia data**” appears in Claim 19 of the ‘494 Patent. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “multimedia content” and “multimedia data” to be the same as that given for the term “**multimedia data products**,” or thus “content consisting of at least two media types such as video, audio, images or text” (see ¶ 143 above).

151. The term “**addressable and reserved storage space[s] for storing digital advertising data**” appears in Claims 1 and 33 of the ‘494 Patent (where claim 33 recites “storage spaces”), and the term “**addressable and reserved storage space for storing the particular advertising data**” appears in Claim 19 of the ‘494 Patent. For the purpose of my analysis herein, I consider each of these

claim terms to have the same meaning, the broadest reasonable interpretation of which to be the same as that for the term “individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data,” or thus “individually controlled data storage section set apart just for storing advertising data” (see ¶¶ 118 and 146 above).

152. The term “**particular advertising data for targeting to at least one end user**” (or an antecedent reference to it) appears in Claims 1, 3, 6-7, 16-19, 24, 26-28, 33, 35-36 and 41 of the ‘494 Patent. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “particular advertising data for targeting to at least one end user” to be the same as that given for the term “**customer specific advertising data**,” or thus “promotional content consisting of at least two media types that is targeted for consumption by a specific customer or end user by a particular identifier or selection code” (see ¶¶ 118 and 147 above).

153. The term “**predefined criteria data**” appears in Claims 1, 3 and 19 of the ‘494 Patent. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “predefined criteria data” to be the same as that assumed by the PTO in allowing these claims (see ¶ 118 above), or thus “one or more of total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available

advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness”.

154. The term “**automatically**” appears in Claims 3 and 43 of the ‘494 Patent. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “automatically” to be the same as described above for the ‘090 Patent (see ¶ 149 above), or thus “without human intervention”.

155. The term “**suitability criteria data**” appears in Claims 4, 5, 23, 25, 33 and 35 of the ‘494 Patent. I note that this claim term lacks antecedent basis as used in Claims 4, 5, 23, and 25. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “suitability criteria data” to be the same as that given for the term “**predefined criteria data**,” or thus “one or more of total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness” (see ¶ 153 above).

156. The term “**partitioned area of a hard disk drive**” appears in Claim 32 of the ‘494 Patent. For the purpose of my analysis herein, I consider the broadest reasonable interpretation of the claim term “partitioned area of a hard disk drive” to be “all of or a specified portion of a hard disk”.

157. I have applied a plain and ordinary meaning to all remaining claim terms for the purposes of this Covered Business Method Review proceeding.

158. In the event that one or more of these constructions is changed, I reserve the right to revisit my analysis under the different construction(s).

VII. STATE OF THE ART

159. As of either June 12, 1997, which the Patent Owner alleges to be the priority date for the ‘090 and ‘494 Patents, or Aug. 26, 1999, when the application that became the ‘090 and ‘494 Patents was filed, the state of the art in the field of data management systems through which data can be selected, purchased or rented, received, stored, manipulated, and downloaded by a user and then downloaded to ultimate storage or use already fully encompassed the concepts of and the implementation for using account transaction servers, programmable local receiver units, reserved storage spaces and targeted advertising, as well as all other aspects of the asserted claims of the ‘090 and ‘494 Patents, as evidenced in even the small sample of the art described herein.

A. Hite (Ex. 1009)

160. For example, amongst the numerous prior art references in this field, U.S. Patent No. 5,774,170 by Kenneth C. Hite et al. entitled “System and method for delivering targeted advertisements to consumers” (“Hite”) was filed on Dec. 13, 1994, which is more than 1 year before the earliest priority date of the ‘090 and ‘494 Patents as claimed by the Patent Owner (see, for example, Ex. 1009 at (22)). Additionally, Hite issued on (and therefore was published by) June 30, 1998, which is more than 1 year before the earliest priority date of the ‘090 and ‘494 Patents per my analysis herein (see, for example, Ex. 1009 at (45) and ¶ 125

above). Thus, I understand that Hite also qualifies as prior art to the ‘090 and ‘494 Patents at least under § 102(a), (b), and (e).

161. As Hite summarizes in its “Background of the Invention” section, the Hite patent “relates to an electronic system and a process for enhancing advertising by delivering TV and radio commercials targeted to individual viewer's based desires and needs” (see, for example, Ex. 1009 at 1:7-10). Thus, Hite is clearly from the same field of art as the ‘090 and ‘494 Patents and is clearly addressing similar problems as those purportedly addressed by the ‘090 and ‘494 Patents.

162. As Hite notes at the time of its filing in 1994, “For over forty years, television (TV) advertising has represented the cornerstone of consumer marketing” and further “TV has been dominated by the broadcast networks which were the best available means of broad reach for advertisers” (see, for example, Ex. 1009 at 1:11-12, 1:17-18). More specifically, Hite discloses that the “Broadcast networks and their affiliates” as of 1994 “still receive the vast majority of advertiser dollars for two reasons” (emphasis added, see, for example, Ex. 1009 at 1:26-28).

163. Hite explains the first reason as “advertisers believe that placing their commercials in specific programs will ensure that they reach the right kind of viewers (usually based on crude demographic assumptions, e.g., women 18-49 are likely to be the best prospects for their product)” even though such advertisers are

aware that this approach is “highly wasteful” (see, for example, Ex. 1009 at 1:28-33). Hite discloses that “the answer” to this “wasteful” problem is already known as “Target marketing,” wherein an advertiser should deliver each “commercial to only those who are the best prospects” (see, for example, Ex. 1009 at 1:36-37). But for the state of the art in 1994, Hite opines “Direct mail can now do this, but not TV or radio” (see, for example, Ex. 1009 at 1:45).

164. Hite explains the second reason as being because the broadcasters “continue to attract the largest audience (approximately 60% of all viewers) despite the proliferation of cable channels which has fragmented the viewing audience” but notes that “The likelihood that viewers are watching any particular commercial/advertisement is reduced by the sheer quantity of channels” (see, for example, Ex. 1009 at 1:46-52). Hite further warns that the future (beyond 1994) portends a “growing number of channels and resultant fragmentation of the viewing audience into smaller and smaller units” that “makes it difficult and expensive for advertisers to reach particular consumers” (see, for example, Ex. 1009 at 2:32-35).

165. Thus, Hite summarizes the situation for advertisers in 1994 with a bleak synopsis wherein “current methods subject the viewer to a series of commercials which are mostly of little interest” and thus “commercials are annoying” (see, for example, Ex. 1009 at 2:60-63). Hite predicts “If instead, the

commercials were messages matched to the viewers specific and individual interests and needs, they would be both more effective and welcome, particularly if they also contribute to a reduced fee for the viewer” (see, for example, Ex. 1009 at 2:63-67).

166. Hite admits that while “a number of such systems and processes are known in this art, none of these systems and processes deal with a way to provide specific commercials to viewers needs and wants in a multichannel environment” (see, for example, Ex. 1009 at 3:1-4). For example, Hite describes a known system “wherein predetermined advertisements are transmitted to a node such as small town or city neighborhood of contiguous homes for viewing by audiences of 500-4000 connected to the node” but notes that this system “does not target individual consumers” (see, for example, Ex. 1009 at 3:4:10). Thus, Hite concludes that what was really needed in 1994 was “a system for targeting commercials to those particular consumers who represent only the best prospects for an advertiser” (see, for example, Ex. 1009 at 3:11-13).

167. In the “Summary of the Invention” section, Hite lists the objects of Hite’s invention as being to i) “provide viewers with advertisements which are matched to the viewer's interests and needs,” ii) “provide advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers who are desirable prospects,” iii) “allow the operators of video delivery

systems to increase the effectiveness of their media in delivering meaningful messages to consumers,” and iv) “provide a means of dealing with the clutter resulting from hundreds of channels of video and audio programming containing advertising” (see, for example, Ex. 1009 at 3:20-35).

168. Hite’s summary of the inventions that Hite believes to meet these objectives is described at least in terms a series of process steps, commercial code characteristics, and four different physical embodiments for network elements (see, for example, Ex. 1009 at 3:39, 5:40, 6:60, 7:52, 7:64, 8:16-17). For example, Hite discloses that “advertisements are prepared so that they are suitable for the transmission and storage means employed” and that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” so that the “messages are then delivered to the point of usage” (see, for example, Ex. 1009 at 3:39-45).

169. In this summary section, Hite makes reference to “the signal origination site” (also described as “the origination point” or “the signal origination source”), to “the point of usage,” and to “the point of display” (see, for example, Ex. 1009 at 3:45, 4:3, 4:6, 4:10, 4:45, 4:63, 5:1, 5:8, 7:67). In general, the “point of display” is always at the customer premise and the signal origination site” is always at the “head-end” that is “central” and may also comprise “servers” (see, for example, Ex. 1009 at 4:62-5:6, 5:40-45, 6:60-66, 7:53-63, 7:64-8:2). However,

the “point of usage” depends on the particular embodiment. In some embodiments, the “point of usage” is coincident with the “point of display” (see, for example, Ex. 1009 at 5:40, 6:60) while in other embodiments, the “point of usage” is coincident with the “signal origination site” (see, for example, Ex. 1009 at 7:52, 7:64).

170. As Hite explains, the “commercials” or “advertisements” may be “classified into three categories: 1) non-preemptable, 2) conditionally preemptable, or 3) unconditionally preemptable” (see, for example, Ex. 1009 at 3:46:48). The “non-preemptable” commercials are simply those of the legacy TV broadcast types that are not part of Hite’s target advertisement system (see, for example, Ex. 1009 at 3:48-50). The “conditionally preemptable” commercials are those that “may also be non-preemptable under some circumstances” such as when “a competitor's product may not be used to preempt” (see, for example, Ex. 1009 at 3:50-54). And the “unconditionally preemptable” commercials are those that “may be subject to substitution any time other higher priority commercials are available” (see, for example, Ex. 1009 at 3:56-58). Hite provides one example wherein “Commercials which are subject to preemption” can be “imbedded in programs along with a version of the CID to indicate under what circumstances a more suitable commercial may be substituted” (see, for example, Ex. 1009 at 3:61-64).

171. Hite also describes a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (see, for example, Ex. 1009 at 3:65-4:2). At Hite’s “point of usage,” a “Commercial Processor (CP) is programmed to find and analyze the CID codes in each commercial” such that “[w]hen a match between the CID in the commercial and the CID transmitted and stored at the point of use is found, the advertisement is then presented to the viewer” (see, for example, Ex. 1009 at 4:3-8). Conversely, Hite describes that “When the CIDs do not match, the commercial is ignored and not displayed” but “There would always be one default commercial in the batch that would play” (see, for example, Ex. 1009 at 4:12-13, 4:16-18). Hite also discloses that “There can be either only one match at any given time, or if multiple matches are possible, there is a prioritization sequence that determines which commercial to display and which to ignore” (see, for example, Ex. 1009 at 4:13-18).

172. Hite also describes several additional capabilities that can be enabled by additional “codes” that are “appended to the CID code” and applicable to all “embodiments of the invention” (see, for example, Ex. 1009 at 4:19-23). These include a “frequency indicator code” that “would be loaded into a register at the display site” and “decremented each time the commercial is successfully

displayed” such that “[w]hen the frequency indicator code register reaches zero, the commercial will no longer be displayed” (see, for example, Ex. 1009 at 4:24-32). Additionally, Hite describes a “context code” that “is compared with program identification codes appended to the program signals” such that a “commercial is displayed if it is in a specific channel or network or show” such as, for example, “skiing equipment commercials would be shown during a skiing down hill racing competition” (see, for example, Ex. 1009 at 4:33-40). Similarly, Hite describes a “context blocking code” that “is used to prevent the display of a commercial during certain kinds of programming” when such commercials may be highly inappropriate (see, for example, Ex. 1009 at 4:41-44). Hite further describes a “sequencing code” that would enable “viewers” to “see a series of commercials in correct order” (see, for example, Ex. 1009 at 4:45-51).

173. Another capability disclosed in Hite is a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (see, for example, Ex. 1009 at 4:52-61). Additionally, Hite describes a “registration code” wherein whenever a “commercial is successfully displayed, the registration code is communicated back upstream to the signal origination site” possibly with a “time and date stamp”

added (see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully displayed, but it has also been viewed, recognized, and acted upon” (see, for example, Ex. 1009 at 5:11-16).

174. Hite also notes that there are “several options for the upstream transmission of registration or certification codes” including transmission “at the time the commercial was successfully received” and storage “at the receive site” for relay “to the signal origination site upon request or at a pre-programmed more convenient time,” and that such “upstream communication” can occur via “two-way cable systems, radio transmissions, telephonic communication, or the physical conveyance of a printed report, a magnetic, optical, electronic or other recorded report” (see, for example, Ex. 1009 at 5:17-27).

175. As mentioned above, Hite describes four “preferred embodiments” of the “system and process in accordance with the invention” (see, for example, Ex. 1009 at 5:38-41, 6:60-61, 7:52-53, 7:64-65). For invalidity analysis with respect to

the asserted claims of the ‘090 and ‘494 Patents, the “second preferred embodiment” of Hite is particularly relevant and is described in detail herein.

176. As Hite discloses, in this second preferred embodiment, “an individually addressable digital recording device (RD) with a unique address is installed at the display site in the television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” such that “CID codes chosen for a particular display site (consumer) are transmitted to and stored in an in-home storage at the display site” and further that “Commercials are subsequently transmitted to the in-home storage device with sufficient capacity to hold one or more commercials prior to display” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

177. Furthermore, Hite discloses that “each commercial” has attached to it “codes indicating the conditions and rules required to display the commercial, e.g., date, day-part, network, program context, etc.” wherein such “codes” are “compared to the codes previously stored” so that the “commercial transmitted that is found to match is stored in the storage at the display site” (see, for example, Ex. 1009 at 7:7-12). These functions are performed at a “commercial processor” that also has “storage known as an Ad Queue” where the “CIDs and display rules would be stored” (see, for example, Ex. 1009 at 7:12-14).

178. According to Hite, displaying a particular commercial “time” or “spot” is based upon a “unique identifier code (CID)” for each “addressable ad” (see, for example, Ex. 1009 at 7:15-23). More specifically, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary” (see, for example, Ex. 1009 at 7:24-30).

179. With respect to the details of “Frequency, sequencing, context, certification and personalization data” for such targeted commercials in this second preferred embodiment, Hite refers explicitly to the analogous description for the first preferred embodiment (see, for example, Ex. 1009 at 7:32-34). Thus, Hite is also disclosing for this second preferred embodiment that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” wherein this “algorithm may be transmitted along with the transmitted commercials” and “in accordance with the algorithm, the CID in each incoming commercial is compared to the CIDs previously received and recorded by the RD” (see, for example, Ex. 1009 at 6:10-18).

180. Hite's summary of this second preferred embodiment is given in the paragraph shown below (Ex. 1009 at 7:35-51):

181. In summary, in the second preferred embodiment, prede- 35
termined codes are transmitted to the display site and stored
therein, commercials are then sequentially transmitted to the
display site prior to the time of their intended use. Approp-
riate storage is provided at the display site to store one or
more of the commercials selected by matching the commer- 40
cial's CID with that CID determined as appropriate for the
display site. The broadcast with a break for a target com-
mercial may then be transmitted with codes in the break. If
a match is found and only one commercial is stored, it may
be displayed one or more times, depending on whether a 45
frequency code is included. If a registration or certification
code is included, that code is returned upstream to the signal
origination site when commercials successfully play. The
commercial will then be replaced with another. If storage for
multiple commercials is provided, they are downloaded and 50
used appropriately.

182. Hite also provides a "Detailed Description of the Preferred
Embodiments" with reference to FIGs. 1-5 that are meant to show exemplary
structures for all four of Hite's preferred embodiments (see, for example, Ex. 1009
at 8:45-63). Hite describes FIG. 1 as "a basic block diagram of the system" (see,
for example, Ex. 1009 at 8:52, FIG. 1 as reproduced herein).

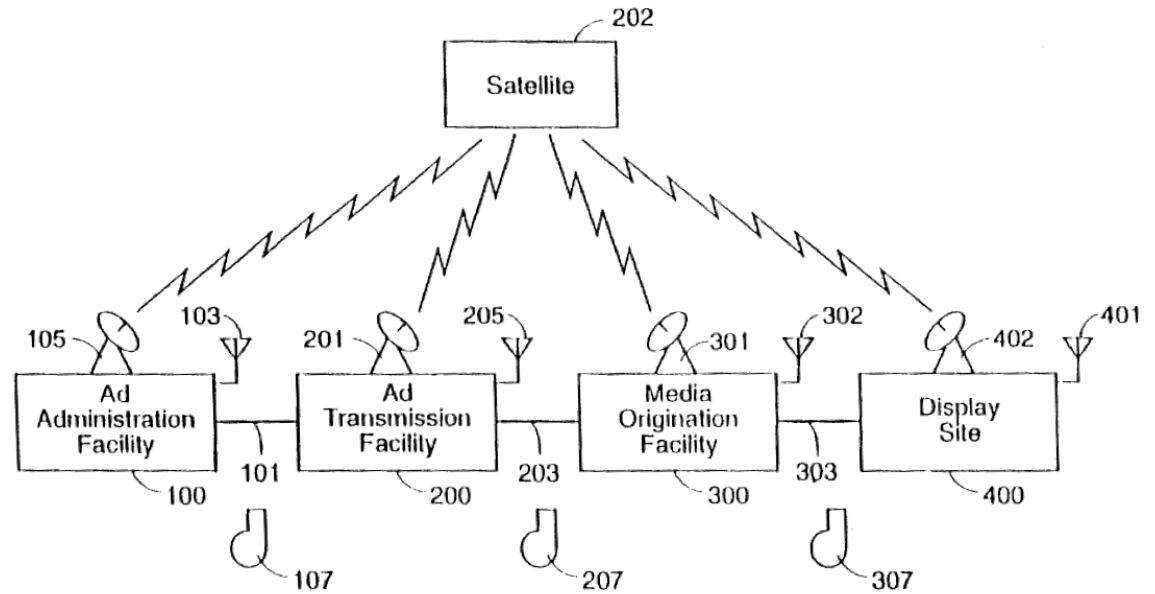
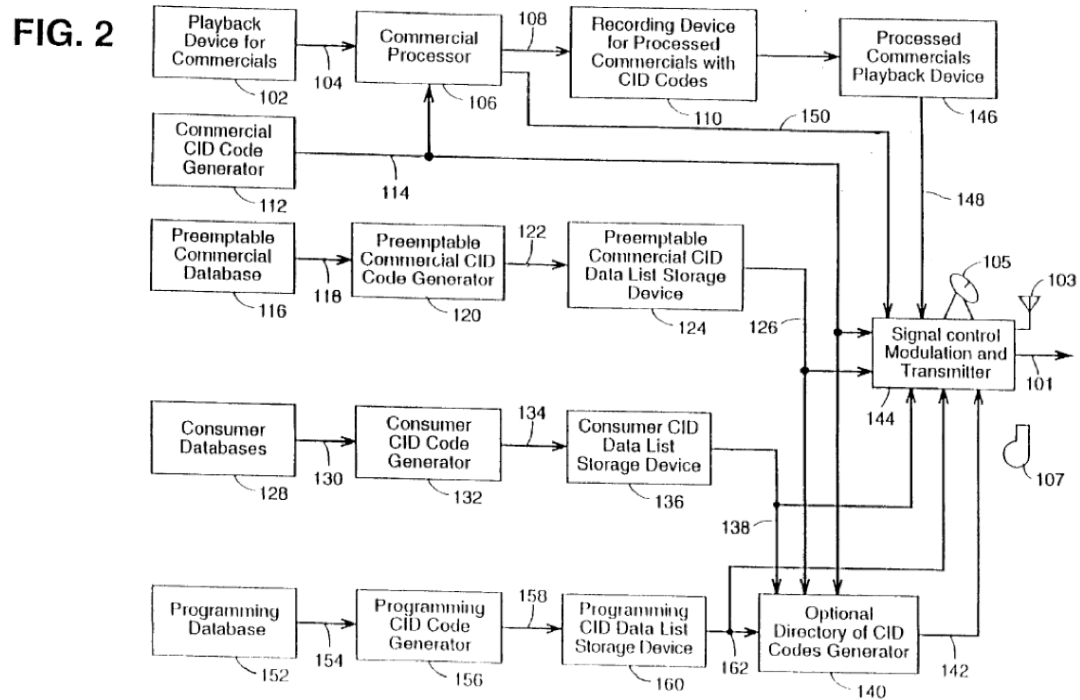


FIG. 1

183.

184. FIG. 1 of Hite depicts four “facilities” each of which has a corresponding figure amongst FIGs. 2-5 (see, for example, Ex. 1009 at 8:53-60). However, Hite specifically notes that “one or more of the facilities **100**, **200**, **300**, and **400** may be co-located simplifying the transmission requirements for the processed commercials and CID codes” as self-evident in my opinion to a POSITA for various ones of Hite’s four preferred embodiments (see, for example, Ex. 1009 at 9:38-41).

185. Hite describes FIG. 2 as “a block diagram of the Advertisement Administration Facility” (see, for example, Ex. 1009 at 8:53-54, FIG. 2 as reproduced herein).



186.

187. Hite describes this “Ad Administration Facility” of FIG. 2 primarily in terms of a “Customer Database **128**” (that is depicted within FIG. 2 as “Consumer Databases **128**”), a “Preemptable Commercial Data Base **116**,” and a “Programming Database **152**” (see, for example, Ex. 1009 at 9:43-55). As Hite notes, “All of these databases yield CID codes which are prepared for conveyance to the Ad Transmission Facility **200**” (see, for example, Ex. 1009 at 9:55-57). Hite further discloses that such “conveyance” can be made “by electrical and/or optical connection **101**, or by radio transmission using antenna **103**, or by satellite transmission using antenna **105**, or by physical means **107** such as optical or magnetic tapes or disks or other suitable means,” as well as simple co-location of

the “Ad Administration Facility **100**” with the “Ad Transmission Facility **200**” (see, for example, Ex. 1009 at 9:38-41, 10:22-26).

188. More specifically, Hite discloses that the “Preemptable Commercial Database **116** contains lists of commercials which can be preempted” wherein this “list is supplied by agencies or organizations which have sold the carriage of the commercial under the condition that it may be preempted under certain circumstances” and further that “Data on these commercials is conveyed by electrical and/or optical connection **118** to the Preemptable Commercial CID Code Generator **120** which creates the appropriate CID codes” (emphasis added, see, for example, Ex. 1009 at 10:33-41).

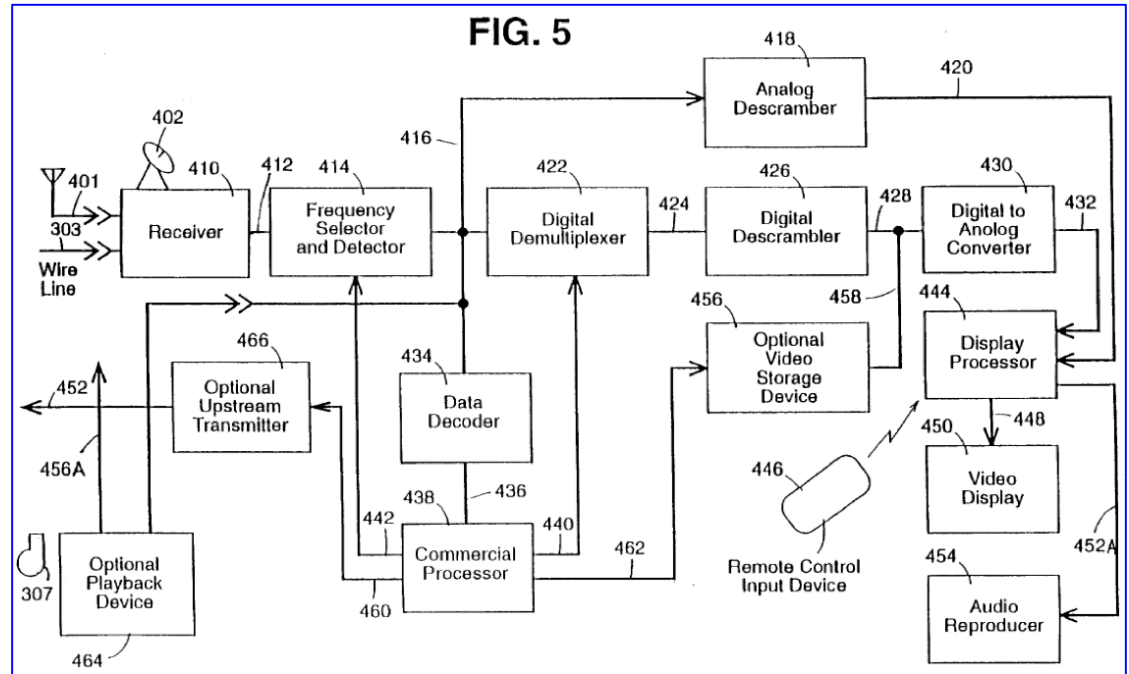
189. Additionally, Hite discloses that the “Customer Database **128** contains lists of consumers who would be viewing or listening to programming and would be served by commercials which match their needs and wants” wherein this “list is supplied by agencies which have gathered data on the consumers and have created algorithms for determining which commercials are most appropriate for those consumers” such that the “combination of the algorithms and the data yield the Consumer CID codes” (see, for example, Ex. 1009 at 10:54-62).

190. Furthermore, Hite discloses that the “Programming Database **152** contains lists of programs would be suitable and eligible for use with commercials which match the needs and wants of consumers in the Consumer Database **128**”

wherein such “programming contains Preemptable Commercials as listed in the Preemptable Commercial Database **116**” (see, for example, Ex. 1009 at 11:13-18).

191. Hite describes FIG. 3 as “a more detailed block diagram of the Ad Transmission Facility **200** of FIG. 1 which receives Programming, Commercial, and Consumer information along with appropriate CID codes from the Ad Administration Facility **100** of FIG. 1 via appropriate communications means either via Satellite **202** and Satellite antenna **201** in the receive mode, or via antenna **205**, or conveyed by electrical and/or optical connection **101**” (see, for example, Ex. 1009 at 11:50-57). Similarly, Hite describes FIG. 4 as “a more detailed block diagram of the Media Origination Facility **300** of FIG. 1” wherein “Signals are received from the Ad Transmission Facility **200** of FIG. 1 and from other sources via Satellite **202** to Satellite Antenna **301**, conveyed by electrical and/or optical connection **203**, and by physical distribution means **207**” (see, for example, Ex. 1009 at 12:56-61). As noted above, Hite discloses that co-location of the “Ad Administration Facility **100**” with the “Ad Transmission Facility **200**” and the “Media Origination Facility **300**” is possible as I believe a POSITA would understand to be a typical arrangement for Hite’s second preferred embodiment (see, for example, Ex. 1009 at 9:38-41).

192. Hite describes FIG. 5 as “a block diagram of the Display Site” (see, for example, Ex. 1009 at 8:60, FIG. 5 as reproduced herein).



193.

194. In reference to FIG. 5, Hite discloses that “Signals are conveyed by electrical and/or optical connection **303** and/or by radio via antenna **401** and/or via satellite via satellite antenna **402** to a receiver **410**” such that “Data Decoder **434** extracts data” and “conveys the extracted data by electrical and/or optical connection **436** to the Commercial Processor **438**” (see, for example, Ex. 1009 at 13:58-62, 14:10-12).

195. Hite further discloses that “Commercial Processor **438** can select the data stream processed by the digital portions of the system by the system by signals conveyed by electrical and/or optical connection **440** to the Digital Demultiplexer **422**” and “can optionally cause upstream signals to be transmitted” by the “Optional Upstream Transmitter **466**” to a “suitable upstream

communications path such as the wire line **303** which may be a coaxial cable, twisted copper pair, or fiber optical link” (see, for example, Ex. 1009 at 14:17-28).

196. Hite also discloses that “Commercial Processor **438** can cause commercial signals to be stored or played back from the Optional Video Storage Device **456** by signals conveyed by electrical and/or optical connection **462** to the Optional Video Storage Device **456**” (see, for example, Ex. 1009 at 14:28-32). Similarly, Hite discloses that “signals from the Digital Descrambler are optionally conveyed by electrical and/or optical connection **458** to an Optional Video Storage Device **456** which can either store or playback certain commercials under the control of signals conveyed by electrical and/or optical connection **462** from the Commercial Processor **438**” (see, for example, Ex. 1009 at 14:41-46). In my opinion, a POSITA would understand that in specific reference to Hite’s second preferred embodiment that this “Video Storage Device **456**” of FIG. 5 would not be “optional” but would in fact be an exemplary implementation of the disclosed “individually addressable digital recording device (RD) with a unique address”.

197. In reference to FIG. 5, Hite further discloses a “Display Processor **444**” that outputs signals conveyed to both the “video display **450**” and the “Audio Reproducer **454**” (see, for example, Ex. 1009 at 14:49-58).

198. Hite also provides 67 claims within this US Patent that I believe a POSITA would understand to cover at least multiple of Hite’s 4 preferred

embodiments (see, for example, Ex. 1009 at 15:8-20:44). In particular, I believe a POSITA would understand that Claim 63 of Hite is supported by Hite's second preferred embodiment (see, for example, Ex. 1009 at 20:6-19, or as reproduced herein).

63. A system for targeting advertisements for display at a consumer display site, comprising:

a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site;

the control device having a storage device for storing the plurality of advertisements;

the control device allowing the display of a selected advertisement of the plurality of advertisements; said control device including a comparator for comparing a code appended to each advertisement and a code stored in the control device and for displaying an advertisement in a break in the program when the codes match.

199.

B. Hill (Ex. 1010)

200. For example, amongst the numerous prior art references in this field, U.S. Patent No. 4,607,346 by Reed A. Hill, entitled "Apparatus and method for placing data on a partitioned direct access storage device" ("Hill") was filed on Mar. 28, 1983, and issued on Aug. 19, 1986, which is more than 1 year before the earliest priority date of the '090 and '494 Patents as claimed by the Patent Owner (see, for example, Ex. 1010 at (22), (11)). Thus, I understand that Hill qualifies as prior art to the '090 and '494 Patents at least under § 102(b).

201. The Abstract of Hill describes that the patent as “A storage device, such as a direct access storage device, is partitioned into a plurality of partitioned devices having different access and storage characteristics matched to the required [performance]. Data may be storage on that partitioned device which most nearly meets the storage characteristics of the data, where the access and storage characteristics of the data are related to its volume and frequency of access” (see, for example, Ex. 1010 at (57)). Hill explains that, generally, “the storage of data is defined by the user of the system,” but since the user is often “Unable to predict the use of data with sufficient precision, the user frequently places data” inefficiently, which results “in excessive response times and overall system degradation” (see, for example, Ex. 1010 at 1:61-63).

202. Hill describes “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data,” where the “‘storage characteristics’ of data are represented, [in Hill] by the access density of the data, which is determined by the applications which access the data” (see, for example, Ex. 1010 at 2:47-57, 4:36-42). Hill describes “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time

divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). Hill teaches that the storage device may be partitioned “into high access and low access partitions 40, and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data.” Ex. 1010 at 4:30-33. In addition, Hill teaches positioning “the high access partition . . . as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced herein).

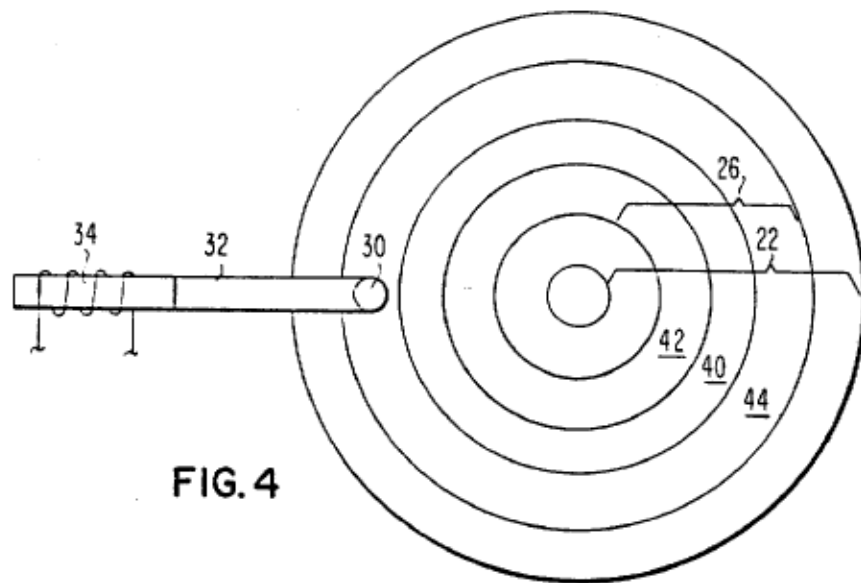


FIG. 4

203.

204. The “high access partition 40” and the “low access partition 42, 44” are “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition.” Ex.

1010 at 4:30-33, 7:9-12. These “two virtual device types are apparent to the system that more nearly match the storage characteristics (volume and frequency of access) of the data to be stored,” resulting in “more cost effective data storage” (see, for example, Ex. 1010 at 8:6-9).

205. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20.” Ex. 1010 at 8:15-25. Hill explains that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

206. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

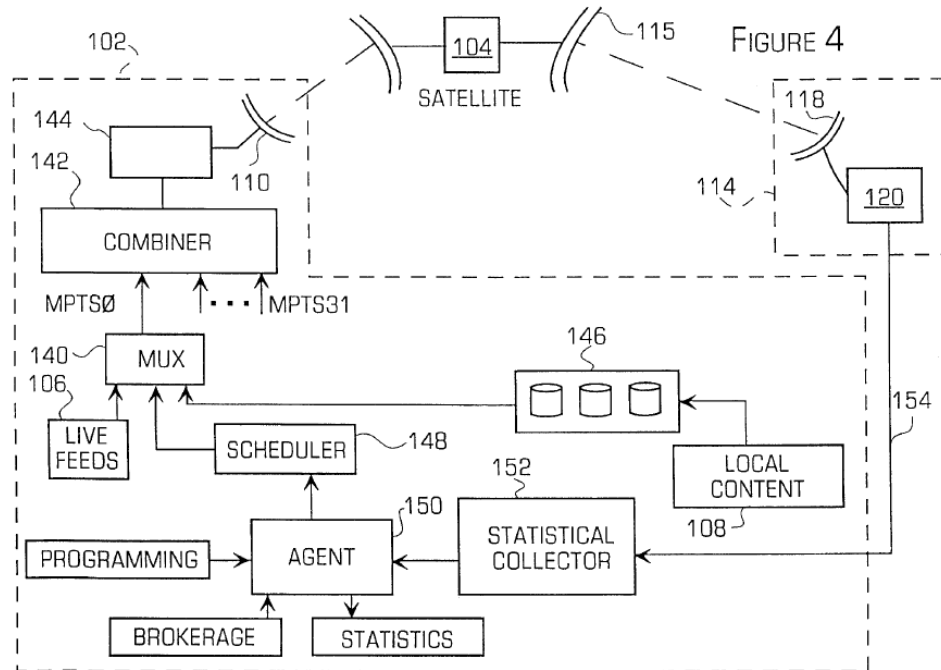
207.

C. Picco (Ex. 1011)

208. For example, amongst the numerous prior art references in this field, U.S. Patent No. 6,029,045 by Martin R. Picco, et al. entitled “System and method for inserting local content into programming content” (“Picco”) was filed on December 9, 1997, which is more than 1 year before the earliest priority date of the ‘090 and ‘494 Patents as claimed by the Patent Owner (see, for example, Ex. 1011 at (22)). Additionally, Picco issued on (and therefore was published by) February 22, 2000. Thus, I understand that Picco also qualifies as prior art to the ‘090 and ‘494 Patents at least under § 102(a) and (e).

209. As Picco summarizes in its “Background of the Invention” section, Picco “relates generally to a system and method for inserting individualized data content into a compressed digital data stream and in particular to a system and method for inserting individualized data content into a compressed digital video and audio data stream being transmitted to a plurality of viewers by any type of broadcast system, such as a satellite-based, cable-based, wireless cable (i.e., microwave) or terrestrial broadcast system” (see, for example, Ex. 1011 at 1:6-13).

Thus, Picco is from the same field of art as the '090 and '494 Patents and is addressing similar (if not identical) problems as those purportedly addressed by the '090 and '494 Patents. An embodiment of the Picco system is shown in Figure 4.



210.

211. A system of Picco is shown in Figure 4 with uplink facility 102, satellite 104, and set top box 120. With respect to set top box 120, Picco states that:

In accordance with the invention, the set-top box [120] . . . may store a portion of the transmitted digital local content data from the satellite and then selectively, based on preselected criteria, such as user preferences, insert the local content into the compressed digital data stream as described below. The set-top box may actually store only the local content transmitted by the satellite which satisfies certain preselected user preferences, and only the local content that satisfies the preferences is inserted into the compressed digital data stream so that

the local content viewed by each household is individualized. For example, a user may be looking to buy a new car, and may select the preferences that are set so that the set-top box for the user stores only local content (i.e., advertisements) about automobiles. Then, when a local content space within the compressed digital data stream is identified, an automobile advertisement is shown to the user.

Ex. 1011 at 6:22-39.

212. Picco's set top box 120 is therefore within the broadest reasonable interpretation of the claimed "advertising data storage section," because it includes data storage for advertising. Picco goes on to describe how the head end 102 monitors and controls the set top box 120.

The scheduler [148] may also generate control signals that control the operation of each set-top box in each household in accordance with the invention. For example, if the viewing statistics for a particular household changes based on the data gathered by the agent 150, the scheduler may generate an instruction, that is transmitted by the satellite to the set-top box in the particular household, which instructs the set-top box to store a different set of the local content that is also being transmitted to the household. The scheduler may also generate command signals for the set-top box which, for example, request the set-top box to update a local content control block, request an upload of statistics from the set-top box, indicate a new download to the set-top box, download software updates to the set-top box for the software being executed by the set-top box, or download a control strategy to the set-top box.

Ex. 1011 at 7:33-48.

D. Baji (Ex. 1025)

213. For example, amongst the numerous prior art references in this field, U.S. Patent No. 5,027,400 by Toru Baji, et al. entitled “Multimedia Bidirectional Broadcast System” (“Baji”), was filed on August 16, 1989, which is more than 1 year before the earliest priority date of the ‘090 and ‘494 Patents as claimed by the Patent Owner (see, for example, Ex. 1025 at (22)). Additionally, Baji issued on (and therefore was published by) June 25, 1991, which is more than 1 year before the earliest priority date of the ‘090 and ‘494 Patents per my analysis herein (see, for example, Ex. 1025 at (45) and ¶125 above). Thus, I understand that Baji also qualifies as prior art to the ‘090 and ‘494 Patents at least under §§ 102(a), (b), and (e).

214. An object of Baji’s invention is “to provide the cable television system with means for efficiently using the limited number of channels so as to cope with the various requests of the subscribers with respect to the advertisement and programs” (see, for example, Ex. 1025 at 3:35-39). Baji discloses a system that “includes a head end 115, which comprises an advertisement data base 131 for effecting a sophisticated advertisement processing and a program broadcast apparatus 103 for appropriately accessing the data base 131 and a program data base so as to insert an advertisement desired by the subscriber into a program desired by the subscriber, and an advertisement transmit apparatus 132”

transmitted to the “subscriber” via the network, such as an “ATM exchange,” and in the local “subscriber system,” using “video signal buffers 161 and 160 for establishing a matching with respect to time between the program and the advertisement and a mixer 162 for mixing outputs from the buffers 161 and 160” (see, for example, Ex. 1025 at 3:42-51).

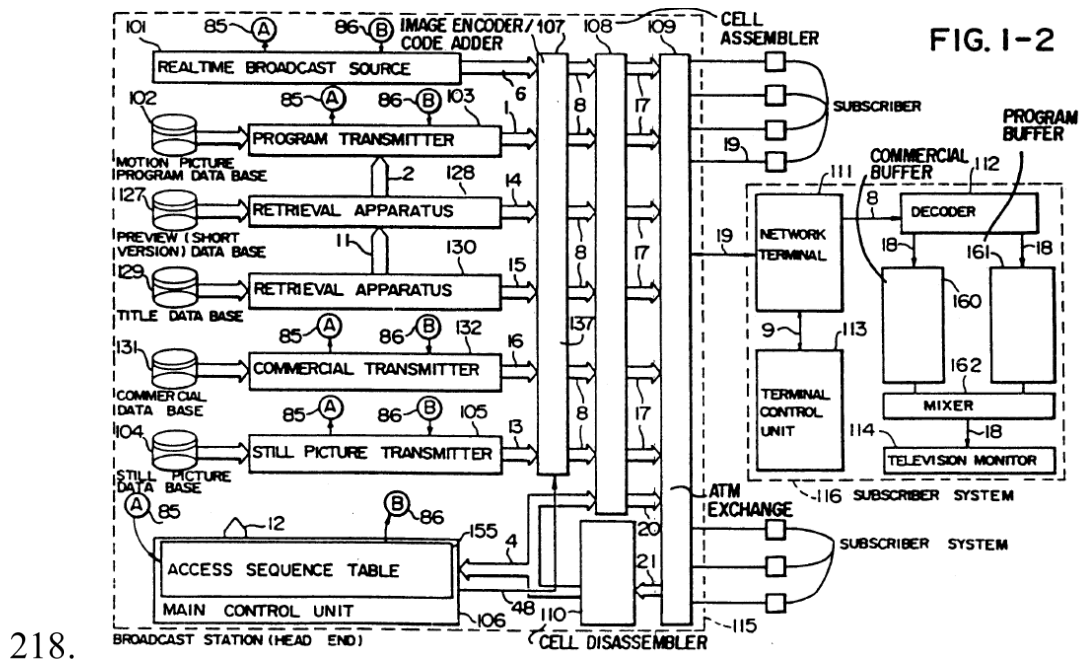
TABLE 1

<u>Advertisement insertion modes</u>				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

215.

216. Baji discloses “inserting advertisement[s] into a program” which includes “a commercial buffer 160 for temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45).

217. Baji also discloses that the system may include “a subscriber terminal 120, which comprises a directional filter 121 for separating up-link and down-link signals, a modulator/demodulator or modem 122 for handling control signals, a terminal control unit 124, a receiver 123, a television (TV) monitor 114, and a video recorder 133” and “a head end 117,” which includes “a program data base 102, a still picture data base 101, a commercial data base 131, a program transmitter 103, a commercial transmitter 132, and a main control unit 118” (see, for example, Ex. 1025 at 13:29-40, FIG 2-1, as reproduced below).



E. Barton (Ex. 1026)

219. For example, amongst the numerous prior art references in this field, U.S. Patent No. 6,233,389 by James M. Barton, et al. entitled “Multimedia Time Warping System” (“Barton”), was filed by TiVo, Inc. on July 30, 1998, which is

more than 1 year before the earliest priority date of the '090 and '494 Patents per my analysis herein (see, for example, Ex. 1026 at (22) and (73)). Thus, I understand that Barton also qualifies as prior art to the '090 and '494 Patents at least under § 102(e).

220. Barton also discloses a system for “time shifting of television broadcast signals” through “real time capture, storage, and display of television broadcast signals” (see, for example, Ex. 1026 at 1:6-9). Barton discloses receiving “television (TV) input streams” which are parsed by a “parser” into “video and audio components” which are then “stored on a storage device” (see, for example, Ex. 1026 at 2:4-33). Barton also discloses that the incoming signal is encoded or converted into “an MPEG stream” before storage (see, for example, 2:4-21).

**VIII. ANTICIPATION AND/OR OBVIOUSNESS OF THE ‘090 PATENT
UNDER 35 U.S.C. §§ 102-103 IN VIEW OF HITE, HITE, AND PICCO**

A. Analysis of Hite, Hill, and Picco and the ‘090 Patent

221. In my opinion, Hite anticipates at least Claims 1-8, 17 and 23 of the ‘090 Patent for at least the reasons described herein.

222. In my opinion, Hite in view of one or more of the knowledge of a POSITA and/or Hill renders obvious at least Claims 1-8, 17 and 23 of the ‘090 Patent for at least the reasons described herein.

223. In my opinion, Hite in view of one or more of the knowledge of a POSITA and/or Picco renders obvious at least Claims 1-8, 17 and 23 of the ‘090 Patent for at least the reasons described herein.

224. In my opinion, Hite in view of one or more of the knowledge of a POSITA and/or Hill further in view of Picco renders obvious at least Claims 1-8, 17 and 23 of the ‘090 Patent for at least the reasons described herein.

225. A general overview of Hite is given at ¶¶ 160-199 above.

226. In my opinion, Hite fully enabled a person of ordinary skill in the art to practice the subject matter described above as applied to Claims 1-8, 17 and 23 of the ‘090 Patent without undue experimentation at least to the extent that the ‘090 Patent is considered to provide an enabling written description of such claims

and at least based on the standard that Patent Owner sets regarding alleged infringement contentions for Petitioner's products with respect to such claims.

227. My specific analysis of Hite, as well as either or both of the knowledge of a POSITA or of Hill or of Picco, with respect to every claim element of Claims 1-8, 17 and 23 of the '090 Patent is given herein.

'090 Patent: Claim 1

1. A data delivery system for providing automatic delivery of multimedia data products from one or more multimedia data product providers, the system comprising:

a remote account transaction server for providing multimedia data products to an end user, at least one of the multimedia data products being specifically identified advertising data; and

a programmable local receiver unit for interfacing with the remote account transaction server to receive one or more of the multimedia data products and for processing and automatically recording the multimedia data products, said programmable local receiver unit including at least one individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data, said at least one advertising data storage section being monitored and controlled by said remote account transaction server and such that said specifically identified advertising data is delivered by said remote account transaction server and stored in said at least one individually controlled and reserved advertising data storage section.

1(a). A data delivery system for providing automatic delivery of multimedia data products from one or more multimedia data product providers, the system comprising:

228. In my opinion, this preamble claim element is a claim limitation.

229. See ¶¶ 143 and 149 above regarding claim construction under the broadest reasonable interpretation for this claim element.

230. As Hite summarizes in its “Background of the Invention” section, the Hite patent “relates to an electronic system and a process for enhancing advertising by delivering TV and radio commercials targeted to individual viewer's based desires and needs” (see, for example, Ex. 1009 at 1:7-10). An exemplary claim 63 within Hite recites as a preamble “A system for targeting advertisements for display at a consumer display site” (see, for example, Ex. 1009 at 20:6-7). Hite describes the “commercials” or “advertisements” as originating from multiple “advertisers” (see, for example, Ex. 1009 at 3:24-28).

231. More specifically, Hite discloses “Commercials can be delivered to specified homes or displays via either over-the-air broadcast or wired delivery systems” (emphasis added, see, for example, Ex. 1009 at 5:35-37) as well as “Data on these commercials” (emphasis added, see, for example, Ex. 1009 at 10:33-41). Hite also describes such commercials, as well as other programming, to be a combination of video and audio media types such as would be processed at a “Display Processor **444**” that outputs signals conveyed to both the “video display **450**” and the “Audio Reproducer **454**” (emphasis added, see, for example, Ex. 1009 at 14:49-58).

232. Additionally, Hite discloses that the system operates without human intervention, for example, when “sets of advertisements are prepared so that they are suitable for the transmission and storage means employed” and “Each

commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” such that the “messages are then delivered to the point of usage” (see, for example, Ex. 1009 at 3:41-45), or when “predetermined codes are transmitted to the display site and stored therein, commercials are then sequentially transmitted to the display site prior to the time of their intended use” (see, for example, Ex. 1009 at 7:35-38). See also ¶¶ 167, 169-171, 176, 181, 187, and 194-196 above.

233. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “satellite television service” is a “system” that “enables the delivery of addressable advertising services” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 5, 11-12). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

234. Thus, Hite discloses a “data delivery system” (system for targeting advertisements for display at a consumer display site) that is “for providing automatic delivery of multimedia data products” (because video/audio combined commercials are analyzed and transmitted to the consumer display site without

human intervention) wherein such “products” are “from one or more multimedia data product providers” (advertisers).

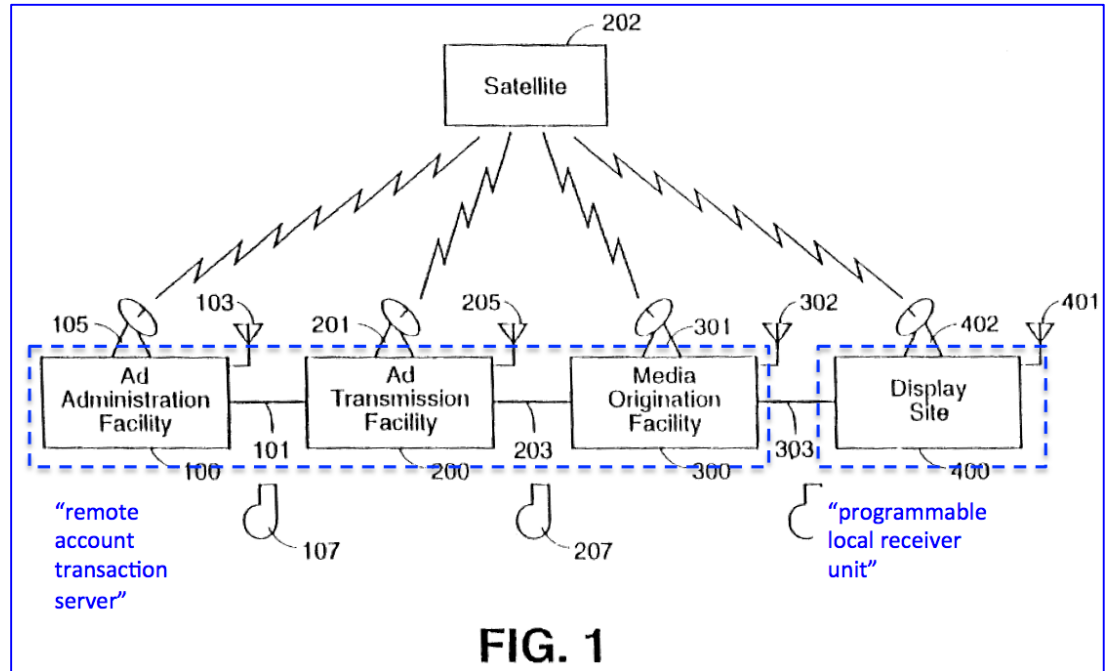
235. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

236. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

1(b): a remote account transaction server for providing multimedia data products to an end user, at least one of the multimedia data products being specifically identified advertising data;

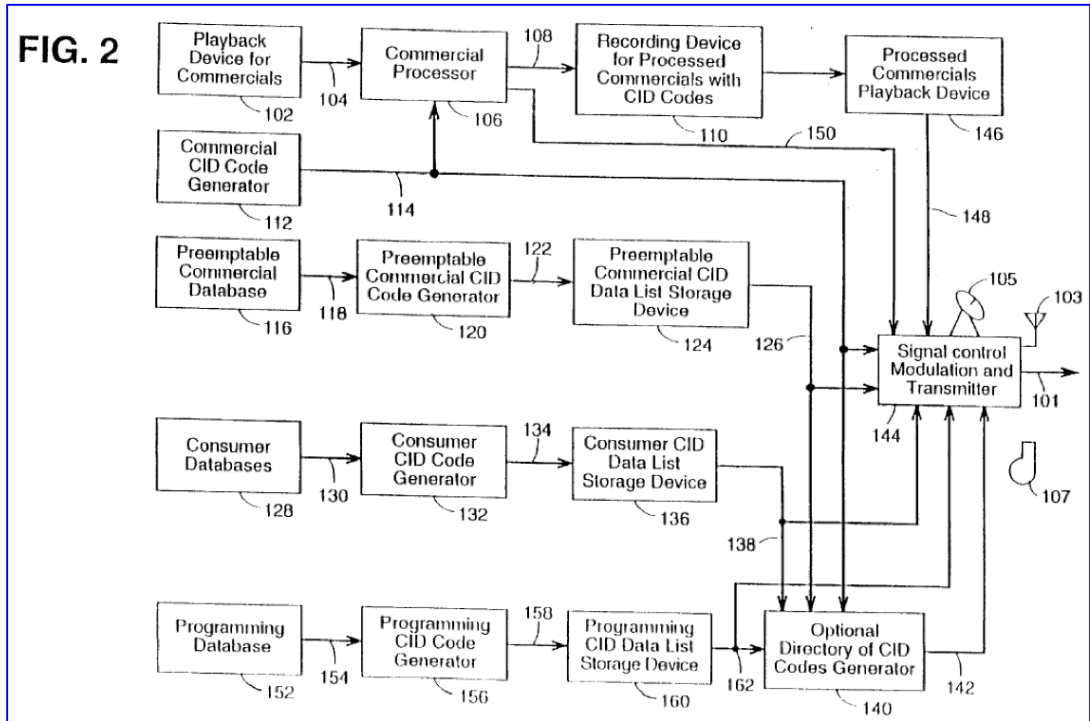
237. See ¶ 143 regarding claim construction under the broadest reasonable interpretation for this claim element.

238. Hite discloses that the automated delivery of targeted commercials to a “consumer display site” as described, for example, in ¶ 232 above can be performed in a co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” (see, for example, Ex. 1009 at 8:52-59, 9:38-41, and FIG. 1 as annotated below).



239. FIG. 1

240. More specifically, Hite discloses the “Advertisement Administration Facility” in terms of “databases” that are used to match “commercials” to “programming” and “consumers” (see, for example, Ex. 1009 at 10:33-11:45 and FIG. 2 as reproduced below). In particular, the “Preemptable Commercial Database 116 contains lists of commercials which can be preempted” for targeted delivery based upon the “Customer Database 128 contains lists of consumers who would be viewing or listening to programming and would be served by commercials which match their needs and wants” wherein this “list is supplied by agencies which have gathered data on the consumers and have created algorithms for determining which commercials are most appropriate for those consumers” such that the “combination of the algorithms and the data yield the Consumer CID codes” (emphasis added, see, for example, Ex. 1009 at 10:33-35, 10:54-62).



241.

242. Additionally, Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” so that “[t]he commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” and “[i]f there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 7:24-28). See also ¶¶ 167-168, 171-173, 177-178, 181, 184, and 187-191 above.

243. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that

Petitioner's "digital broadcast operations facilities" are a "Remote Server" that delivers "targeted national and local television advertising" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 13-14). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

244. Thus, Hite discloses a "remote account transaction server" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that is "for providing multimedia data products" (video/audio combined commercials are provided) to an "end user" (for example, the customer/consumer at the Display Site) wherein "at least one" of such "products" are "specifically identified advertising data" (video/audio combined commercials with appended Consumer CID codes).

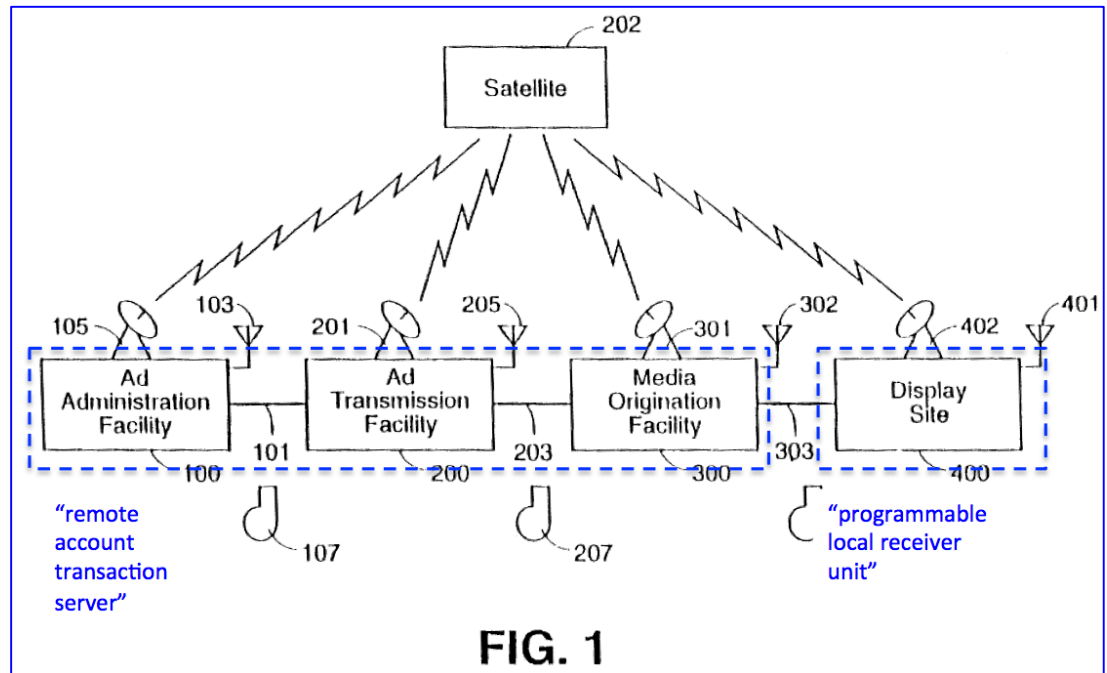
245. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

246. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

1(c): a programmable local receiver unit for interfacing with the remote account transaction server to receive one or more of the multimedia data products and for processing and automatically recording the multimedia data products,

247. See ¶¶ 143 and 149 above regarding claim construction under the broadest reasonable interpretation for this claim element.

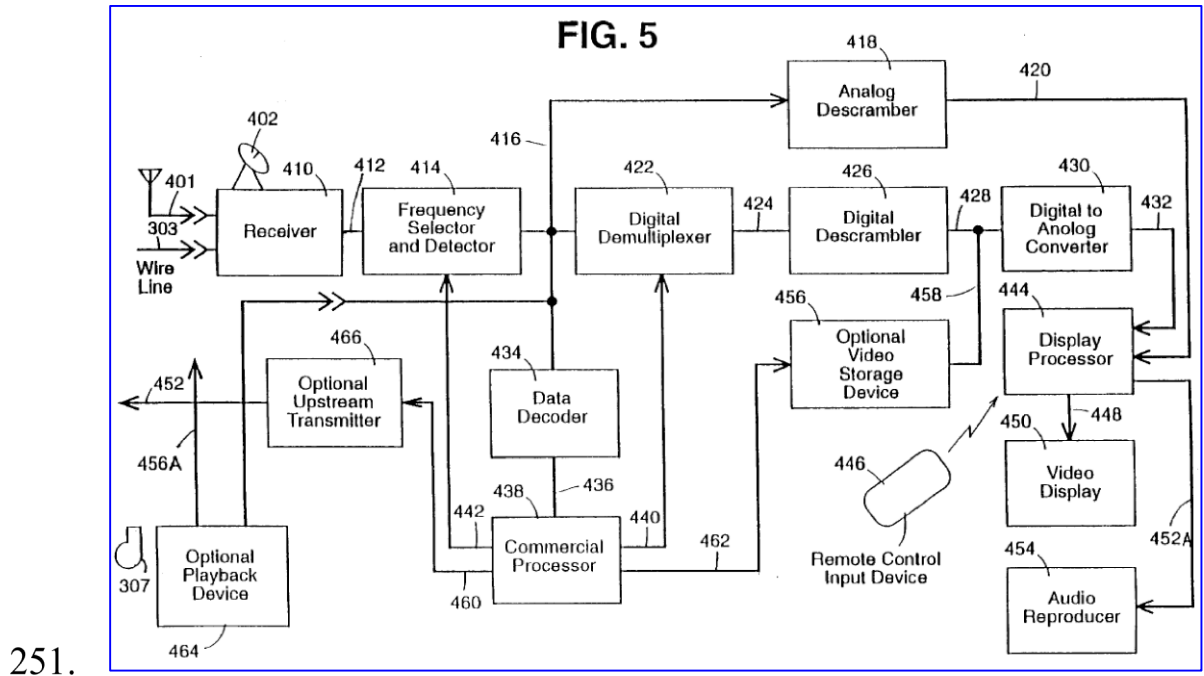
248. Hite discloses that the automated delivery of targeted commercials to a “consumer display site” as described, for example, in ¶ 232 above is based upon an interface that “conveys the signals by electrical and/or optical connection 326 to an antenna for over the air transmission and or conveys the signals by electrical and/or optical wire line connection 303 to a plurality of Display Sites 400 of FIG. 1” from the co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” (see, for example, Ex. 1009 at 9:38-41, 13:21-25, and FIG. 1 as annotated below). Hite also describes the “display site” as having a “digital recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 6:62-66).



249.

250. More specifically, Hite discloses that at the “Display Site,” “Signals are conveyed by electrical and/or optical connection 303 and/or by radio via antenna 401 and/or via satellite via satellite antenna 402 to a receiver 410” (emphasis added, see, for example, Ex. 1009 at 13:58-62, FIG. 5 as reproduced below). In particular, such received “signals” for such “commercials” with “CID codes” from the co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” are “processed” at the “Display Site” of FIG. 5 in at least the “Commercial Processor **438**” and the “Display Processor **444**” as well as recorded in the “Video Storage Device **456**” (see, for example, Ex. 1009 at 14:28-30, 14:54-58, FIG. 5 as reproduced below). For example, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played

back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as reproduced below).



251. Furthermore, Hite describes that “predetermined codes are transmitted to the display site and stored therein, commercials are then sequentially transmitted to the display site prior to the time of their intended use” and that “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (emphasis added, see, for example, Ex. 1009 at 7:35-42).

253. Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder Interface of "cable ready" products,

and other display devices” wherein such “electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65).

254. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 230 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17). See also ¶¶ 167-169, 176, 181, 191, 194, 196 and 199 above. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18). Moreover, Hite describes that “The appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants” as reflected in “an algorithm” that “can be devised and downloaded to the display site” such that an

“inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:18-27). Hite continues by disclosing “That algorithm is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” (emphasis added, see, for example, Ex. 1009 at 8:27-35). Hite’s disclosure of an “algorithm” and “microcomputer program” that executes on a “processor” is a disclosure of “software” under the broadest reasonable interpretation of this claim.

255. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices are receivers that are provided to Dish Network customers as part of Dish Network’s satellite television service” and further that such “DVR Devices include a processor, such as the Dish Hopper’s Broadcom BCM7420 processor, and associated software that enable the device to be programmed by an end user or data supplier” and thus in Patent Owner’s view

meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 14-17). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

256. Thus, Hite discloses a "programmable local receiver unit for interfacing with the remote account transaction server" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site that receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that is "to receive one or more of the multimedia data products" (for example, the control device that is receiving a program and a plurality of advertisements for display at the display site) and that is "for processing and automatically recording the multimedia data products" (for example, the control device at the consumer display site has a Commercial Processor that can cause commercial signals to be stored in a Video Storage Device).

257. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

258. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also

renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

1(d): said programmable local receiver unit including at least one individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data,

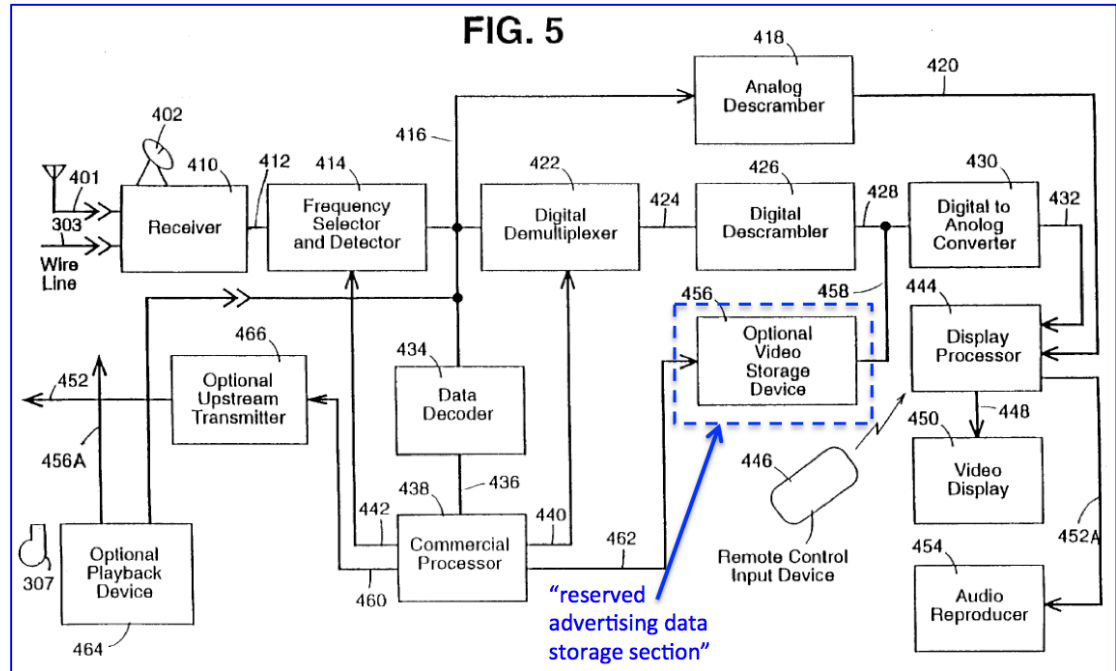
259. See ¶ 146 above regarding claim construction under the broadest reasonable interpretation for this claim element.

260. Hite discloses that “commercials” are “sequentially transmitted to the display site prior to the time of their intended use” and “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (see, for example, Ex. 1009 at 7:37-42). In particular, Hite describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as having “installed” within it “an individually addressable digital recording device (RD) with a unique address” that can store “CID codes chosen for a particular display site (consumer)” and can “hold one or more commercials prior to display” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3). Hite also discloses that one advantage of using a “digitized commercial” is “that it requires less memory to store” (emphasis added, see, for example, Ex. 1009 at 10:1-6).

261. Similarly, Hite describes “Commercial time or spots” as “addressable ads” that “can be displayed” via “a unique identifier code (CID)” that is “part of

the conditions required for displaying the addressable spot” (see, for example, Ex. 1009 at 7:15-18). Furthermore, Hite describes that “The commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” (see, for example, Ex. 1009 at 7:24-28). In addition, Hite summarizes that “If a registration or certification code is included, that code is returned upstream to the signal origination site when commercials successfully play” so that such a “commercial will then be replaced with another” and “[i]f storage for multiple commercials is provided, they are downloaded and used appropriately” (emphasis added, see, for example, Ex. 1009 at 7:46-51). See also ¶¶ 167-169, 171-172, 176-178, 181, 191, 196 and 199 above.

262. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated below).



263.

264. Hite’s “individually addressable digital recording device (RD) with a unique address” or “Video Storage Device” discloses “individually controlled data storage section set apart just for storing advertising data” (as the “reserved advertising data storage section” is construed per broadest reasonable interpretation, see ¶¶ 144-146 above) at least because Hite discloses (1) an “individually addressable digital recording device (RD) with a unique address,” which stores only “CID codes” and/or commercials with associated CID codes (see, for example, Ex. 1001 at 6:61-7:3); (2) a “Video Storage Device,” which stores only digital commercial signals for subsequent playback (see, for example, Ex. 1001 at 14:28-32); and/or (3) an “Ad Queue in the commercial processor” for storing “the CIDs and display rules” for commercial playback (see, for example, Ex. 1001 at 7:12-14), per my analysis herein (see, for example, ¶¶ 260-263 above).

265. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 230 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

266. Additionally, I note that Hite discloses no other “memory” or “storage device” at the “display site” other than the “individually addressable digital recording device (RD) with a unique address” or “Video Storage Device” and Hite discloses no other usage for such “memory” or “storage device” at the “display site” other than storing “CID codes” and/or the “commercials” with “CID codes,” thereby disclosing that the data storage section of the data storage device must be those “set apart just for storing advertising data”. See also ¶¶ 167-169, 176-178, 181, 191, 196 and 199 above.

267. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices come with memory, such as a hard drive, RAM, and

Flash Memory” and further that such “memory” or “storage device” hold “targeted ads” (as well as everything else in the DVR system) and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 17-20). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

268. Thus, Hite discloses a “programmable local receiver unit” (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site) including at least one “reserved advertising data storage section” (the individually addressable digital recording device (RD) with a unique address or Video Storage Device) that is “individually controlled” (via its individually addressable unique address) and that is “adapted specifically for storing the specifically identified advertising data” (at least because it only stores CID codes and/or commercials with CID codes).

269. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

270. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

271. In addition, to the extent that an “individually controlled data storage section set apart just for storing advertising data” under the broadest reasonable interpretation proposed herein (see ¶ 144 above) is considered to not be disclosed by the “individually addressable digital recording device (RD) with a unique address,” “Video Storage Device,” or “Ad Queue in the commercial processor” (see, for example, Ex. 1009 at 6:61-7:14, 14:28-32), then in my opinion a person of ordinary skill in the art at the time would have been motivated to combine Hite with any of multiple prior art references that explicitly disclose an “individually controlled and reserved data storage section adapted specifically for storing the specifically identified advertising data,” such as Hill (see ¶¶ 200-205 above). Hill discloses a system including “a storage device, such as a direct access storage device,” that is “partitioned” into “a plurality of devices having different access and storage characteristics matched to the required performance” and a processor programmed for “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data, where the “‘storage characteristics’ of data are represented, [in Hill] by the access density of the data, which is determined by the applications which access the data”” (see ¶ 202 above), wherein data storage device is partitioned into “high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition

40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see ¶ 204 above), and once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see ¶ 205 above).

272. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would have looked to Hill’s high access partition to further address a need identified by

Hite to increase storage efficiency and accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers.” (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite’s “commercial storage and playback device” and/or the “optional video storage device.” (see ¶¶ 202-205 above)

273. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

1(e): said at least one advertising data storage section being monitored and controlled by said remote account transaction server and such that said specifically identified advertising data is delivered by said remote account transaction server and stored in said at least one individually controlled and reserved advertising data storage section.

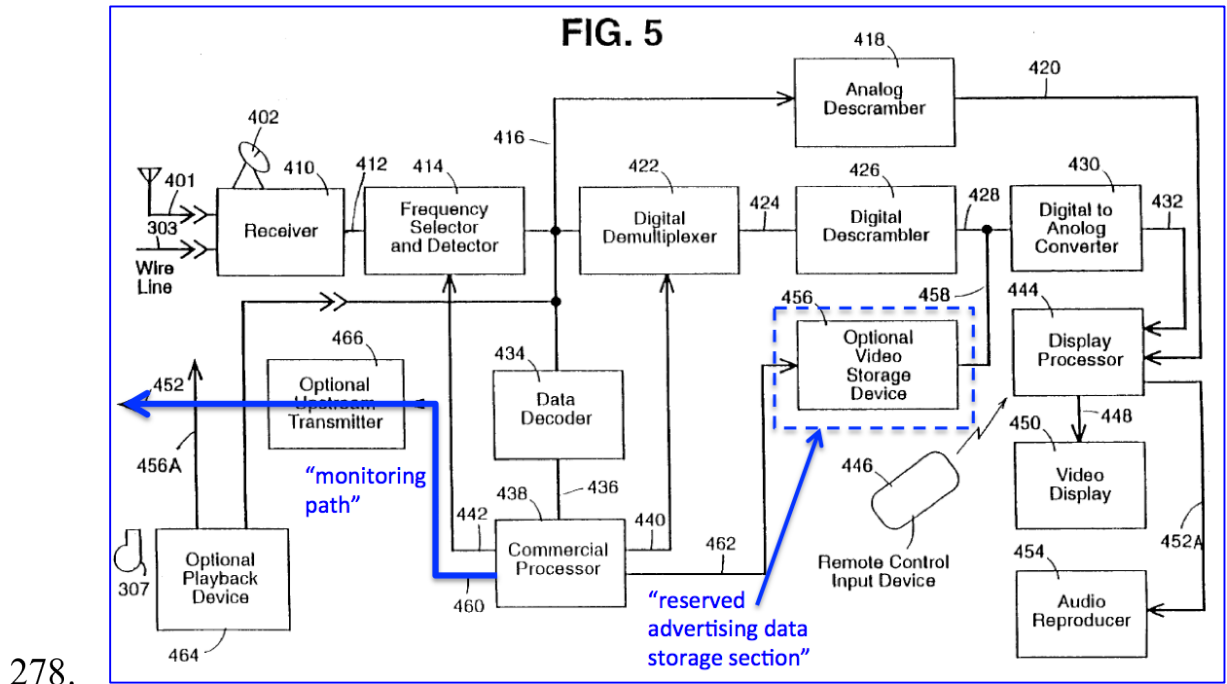
274. See ¶ 146146 above regarding claim construction under the broadest reasonable interpretation for this claim element.

275. Hite discloses that “Commercials can be delivered to specified homes or displays via either over-the-air broadcast or wired delivery systems” and “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (emphasis added, see, for example, Ex. 1009 at 5:35-37, 7:37-42). In particular, Hite describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as having “installed” within it “an individually addressable digital recording device (RD) with a unique address” that can store “CID codes chosen for a particular display site (consumer)” and can “hold one or more commercials prior to display” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3). Hite also discloses that one advantage of using a “digitized commercial” is “that it requires less memory to store” (emphasis added, see, for example, Ex. 1009 at 10:1-6).

276. Hite discloses a co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” (see, for example, Ex. 1009 at 8:52-59, 9:38-41, and FIG. 1 as annotated in ¶ 239 above). Hite also discloses that at this “Advertisement Administration Facility,” the “Commercials suitable to the needs and wants of those viewing or hearing programming are also categorized and an appropriate CID code is generated and appended to the commercial,” thereby controlling the particular “commercials” that are targeted for “delivery” to such “display sites,” “homes” or “control device” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” (see, for example, Ex. 1009 at 9:47-50).

277. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated below). Hite also discloses that this “Commercial Processor 438” can “cause upstream signals to be transmitted by signals conveyed by electrical and/or optical connection 460 to the Optional Upstream Transmitter 466 which creates signals conveyed by electrical and/or optical connection 452 to a suitable upstream communications path such as the wire line 303 which may be a coaxial cable, twisted copper pair, or fiber optical link,” thereby providing a

“monitoring path” back to the co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated below).



279. Furthermore, Hite describes a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (see, for example, Ex. 1009 at 4:52-61). Additionally, Hite discloses “viewer identification” that can be used to either associate or disassociate various such devices at a “display site”. For example, Hite describes a “registration code” that “is communicated back upstream to the

signal origination site” and can comprise “a viewer identification number” that “is included in the acknowledgment messages centrally collected” (emphasis added, see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully displayed, but it has also been viewed, recognized, and acted upon” (see, for example, Ex. 1009 at 5:11-16).

280. Moreover, Hite notes “[t]he apparatus at the viewing site can store and process CIDs for multiple individuals at the viewing site” so that “[w]hen the viewer identifies himself or herself either directly or indirectly, the commercials appropriate to that individual are presented” (emphasis added, see, for example, Ex. 1009 at 8:39-43).

281. Hite also notes that there are “several options for the upstream transmission of registration or certification codes” including transmission “at the time the commercial was successfully received” and storage “at the receive site” for relay “to the signal origination site upon request or at a pre-programmed more

convenient time,” and that such “upstream communication” can occur via “two-way cable systems, radio transmissions, telephonic communication, or the physical conveyance of a printed report, a magnetic, optical, electronic or other recorded report” (see, for example, Ex. 1009 at 5:17-27). See also ¶¶ 167-169, 171-172, 176-178, 181, 191, 196 and 199 above.

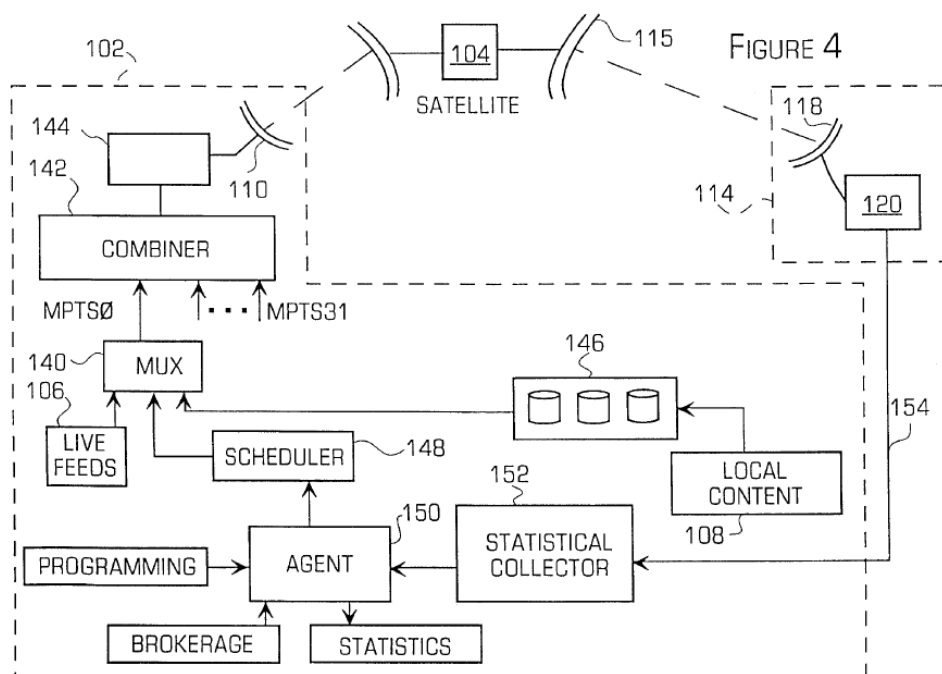
282. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “set-top boxes” communicate with “software” alleged to be in Petitioner’s “network” for “a decision on what ads to run” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 21-24). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

283. Thus, Hite discloses an “advertising data storage section” or at least one “reserved advertising data storage section” (the individually addressable digital recording device (RD) with a unique address or Video Storage Device) that is “individually controlled” (via its individually addressable unique address) as being “being monitored and controlled” (via CID codes that target commercials to particular homes or display sites and via registration or certification codes

transmitted in an upstream path) by a “remote account transaction server” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) such that “specifically identified advertising data” (video/audio combined commercials with appended Consumer CID codes) is “delivered” (to the display site device via either over-the-air broadcast or wired delivery systems) and “stored” (in the digital recording device via matching the commercial's CID with that CID determined as appropriate for the display site).

284. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

285. In addition, to the extent that an “said at least one advertising data storage section being monitored and controlled by said remote account transaction server” under the broadest reasonable interpretation proposed herein is considered to not be disclosed Hite alone, then in my opinion a person of ordinary skill in the art at the time would have been motivated to combine Hite or the combination of Hite and Hill with any of multiple prior art references that explicitly disclose an “at least one advertising data storage section being monitored and controlled by said remote account transaction server,” such as Picco (see ¶¶ 208 - 212 above). An embodiment of the Picco system is shown in Figure 4.



286. Picco's Figure 4 includes an uplink facility 102, satellite 104, and set top box 120. Picco further states "In accordance with the invention, the set-top box [120] . . . may store a portion of the transmitted digital local content data from the satellite and then selectively, based on preselected criteria, such as user preferences, insert the local content into the compressed digital data stream as described below. The set-top box may actually store only the local content transmitted by the satellite which satisfies certain preselected user preferences, and only the local content that satisfies the preferences is inserted into the compressed digital data stream so that the local content viewed by each household is individualized. For example, a user may be looking to buy a new car, and may select the preferences that are set so that the set-top box for the user stores only

local content (i.e., advertisements) about automobiles. Then, when a local content space within the compressed digital data stream is identified, an automobile advertisement is shown to the user.” Ex. 1011 at 6:22-39.

287. A person of ordinary skill in the art would understand Picco’s set top box 120 to be within the broadest reasonable interpretation of the claimed “advertising data storage section,” because it includes data storage for advertising. Picco further describes the head end 102 monitoring and controlling the set top box 120: “The scheduler [148] may also generate control signals that control the operation of each set-top box in each household in accordance with the invention. For example, if the viewing statistics for a particular household changes based on the data gathered by the agent 150, the scheduler may generate an instruction, that is transmitted by the satellite to the set-top box in the particular household, which instructs the set-top box to store a different set of the local content that is also being transmitted to the household. The scheduler may also generate command signals for the set-top box which, for example, request the set-top box to update a local content control block, request an upload of statistics from the set-top box, indicate a new download to the set-top box, download software updates to the set-top box for the software being executed by the set-top box, or download a control strategy to the set-top box.” Ex. 1011 at 7:33-48.

288. Therefore the scheduler “request[ing] an upload of statistics from the set-top box” is within the broadest reasonable interpretation of “said at least one advertising data storage section being monitored by said remote account transaction server.” Likewise, the scheduler “which instructs the set-top box to store a different set of the local content that is also being transmitted to the household” is within the broadest reasonable interpretation of the claimed “said at least one advertising data storage section being controlled by said remote account transaction server.”

289. A person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite or the combination of Hite and Hill with Picco because the prior art references are directed to use of delivering and inserting content in a data stream, such as targeted advertising (see, for example, Ex. 1009 at 1:7-10, 1:26-45, 3:21-35; Ex. 1011 at 2:49-55; 4:56-63). In addition, a person of ordinary skill in the art would have looked to Picco’s head end, including the scheduler and statistical collator, to provide greater monitoring and control of set top boxes, such as Hite’s RD recorder. In addition, one of ordinary skill in the art would have looked to Picco’s monitoring and controlling of data storage sections to further address an issue identified by Hite to accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers” (see, for example, Ex. 1009

at 3:21-35; Ex. 1011 at 4:56-63; 7:33-48). The combination of the head-end monitoring and control of Picco with the Hite RD would further accomplish the object of providing “deliver[ing] television programming to consumers in a more targeted manner than is possible with existing cable or satellite systems. . . . for example, deliver geographically localized content to a particular area over a non-geographically localized transmission medium, such as a satellite system” (see, for example, Ex. 1009 at 3:21-35, and Ex. 1011 at 1:55-61). Furthermore, the combination yields the completely predictable result that monitoring and controlling a data storage section would allow a remote account transaction server to deliver individualized services to consumers including services such as storage and playback of advertisement data targeted to a user’s preferences. In particular, the combination yields the completely predictable and desirable result that using the control and monitoring of Picco’s head end would allow more targeted control of set top boxes such as Hite’s RD system (see, for example, Ex. 1011 at 1:55-61; 7:33-48). A person of ordinary skill in the art would have further been motivated to combine the disclosure of Hite in view of Hill for the reserved storage section with the monitoring and controlling of the storage by a remote account transaction server in Picco because it would further improve the targeting and measurement of user’s viewing of advertising data, which each of Hite and Picco disclose are purposes of its invention. This system would yield the predictable result of a

system that can monitor or control individual storage sections for advertising by a remote account transaction server to improve and analyze statistics associated with the viewing and presentation of targeted ads. Thus, such a combination would be obvious to a person of ordinary skill in the art.

290. At least because Hite discloses the limitations of this claim element, then Hite in view of Picco and/or Hite in view of Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 2

2. The system of claim 1 wherein said multimedia data products are received via Network TV broadcast, Cable TV broadcast, or Satellite TV broadcast.

2. The system of claim 1 wherein said multimedia data products are received via Network TV broadcast, Cable TV broadcast, or Satellite TV broadcast.

291. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Hill further in view of Picco or Hite in view of Picco renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 228 - 290 above.

292. See ¶ 143 above regarding claim construction under the broadest reasonable interpretation for this claim element.

293. Hite discloses “Commercials can be delivered to specified homes or displays via either over-the-air broadcast” to a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 5:35-37, 6:63-66). This is also depicted in FIG. 1 of Hite as shown in the annotated figure at ¶ 239 above.

294. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are receiving “content” over a “satellite broadcast” (or “DBS”) and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at p. 24). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

295. Thus, Hite discloses “The system of claim 1” (as described above) wherein “multimedia data products” (video/audio combined commercials) are “received via Network TV broadcast, Cable TV broadcast, or Satellite TV broadcast” (via broadcast delivery over-the-air or over DBS – Direct Broadcast Satellite).

296. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

297. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 3

3. The system of claim 1, wherein the specifically identified advertising data is customer specific advertising data and the customer specific advertising data is recorded in raw form by said programmable local receiver unit and subsequently processed or edited by a content filter according to preprogrammed user suitability criteria.

3. The system of claim 1, wherein the specifically identified advertising data is customer specific advertising data and the customer specific advertising data is recorded in raw form by said programmable local receiver unit and subsequently processed or edited by a content filter according to preprogrammed user suitability criteria.

298. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 228 - 290 above.

299. See ¶¶ 147 and 148 above regarding claim construction under the broadest reasonable interpretation for this claim element.

300. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3). Hite discloses that the commercials could be in analog form, which a person of ordinary skill would understand is a raw form of data. Ex. 1009 at 7:4.

301. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated in ¶ 278 above). In particular, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for

the default ad, and eliminate it from the ad queue as necessary,” thereby subsequently processing the target commercials according to content rules after storing them first (emphasis added, see, for example, Ex. 1009 at 7:24-30).

302. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” or hence “preferences set by the user” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

303. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 230 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

304. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be

relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" have "software" alleged to "enable each individual TV commercial to have its own unique criteria" for display based upon "viewer patterns, Census data, ZIP+4, and even remote control usage" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 24-26). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

305. The '090 Patent describes that, if requested by the user, "raw data received from data feed lines 10a-10n may be stored directed to built-in non-movable storage device 14" (see, for example, Ex. 1001 at 14:41-45).

306. Thus, Hite discloses "The system of claim 1" (as described above) wherein "specifically identified advertising data" (video/audio combined commercials with appended Consumer CID codes) is "customer specific advertising data" (commercials that are targeted for consumption by a specific display site or consumer according to CID codes - particular identifiers) and is "recorded in raw form" (in the digital recording device via matching the commercial's CID with that CID determined as appropriate for the display site) by said "programmable local receiver unit" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site) and

then “subsequently processed or edited by a content filter” (commercial processor processes each commercial for display at a program break) according to “preprogrammed user suitability criteria” (via matching the commercial's CID with the CIDs based upon user-set preferences such as viewer reaction codes).

307. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

308. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 4

4. The system of claim 3 wherein the customer specific advertising data is processed or edited in multiple versions by said programmable local receiver unit which are either played in real time or stored in said at least one individually controlled and reserved advertising data storage section for subsequent playback.

4. The system of claim 3 wherein the customer specific advertising data is processed or edited in multiple versions by said programmable local receiver unit which are either played in real time or stored in said at least one individually controlled and reserved advertising data storage section for subsequent playback.

309. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 3 of this claim element under either the broadest reasonable interpretation or the various

alternative interpretations described above for at least the reasons summarized in ¶¶ 298-308 above.

310. See ¶¶ 146 and 147 above regarding claim construction under the broadest reasonable interpretation for this claim element.

311. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

312. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated in ¶ 278 above). In particular, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at

a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary,” thereby subsequently processing the target commercials according to content rules after storing them first (emphasis added, see, for example, Ex. 1009 at 7:24-30).

313. Also, as described in at least ¶¶ 259-268 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the “individually controlled and reserved advertising data storage section” of this claim element.

314. Hite also describes several additional capabilities that can be enabled by additional “codes” that are “appended to the CID code” and applicable to all “embodiments of the invention” (see, for example, Ex. 1009 at 4:19-23). These include a “frequency indicator code” that “would be loaded into a register at the display site” and “decremented each time the commercial is successfully displayed” such that “[w]hen the frequency indicator code register reaches zero, the commercial will no longer be displayed” (emphasis added, see, for example, Ex. 1009 at 4:24-32). Hite further describes a “sequencing code” that would enable “viewers” to “see a series of commercials in correct order” (emphasis added, see, for example, Ex. 1009 at 4:45-51).

315. Moreover, Hite describes operation of the “commercial processor” at the “display site” as including the situation where “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” so that “[t]he broadcast with a break for a target commercial may then be transmitted with codes in the break” and “[i]f a match is found and only one commercial is stored, it may be displayed one or more times, depending on whether a frequency code is included” (emphasis added, see, for example, Ex. 1009 at 7:38-46). See also ¶¶ 167, 170-172, 174, 176-179, 181, and 194-197 above.

316. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are alleged to “store” in advance “targeted ads” that “play dynamically during commercial breaks” under “frequency” control and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 27-30). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

317. Thus, Hite discloses “The system of claim 3” (as described above) wherein “customer specific advertising data” (commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “processed or edited in multiple versions” (via the commercial processor in the display site device when applying the frequency or sequencing codes) by said “programmable local receiver unit” (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site) which are “either played in real time or stored in” (commercial processor stores such commercials matching the frequency or sequencing codes in the local digital recording device) said at least one “reserved advertising data storage section” (the individually addressable digital recording device (RD) with a unique address or Video Storage Device) that is “individually controlled” (via its individually addressable unique address) for “subsequent playback” (commercial processor inserts the stored commercials into the display path according to the frequency or sequencing codes at subsequent commercial breaks).

318. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

319. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or

Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 5

5. The system of claim 1, wherein the specifically identified advertising data is customer specific advertising data and wherein custom software automatically analyzes one or more optimal advertising format scenarios based on one or more selected factors including total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness, and said system transmits advertising format scenarios according to a selected placement option.

5. The system of claim 1, wherein the specifically identified advertising data is customer specific advertising data and wherein custom software automatically analyzes one or more optimal advertising format scenarios based on one or more selected factors including total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness, and said system transmits advertising format scenarios according to a selected placement option.

320. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 228 - 290 above.

321. See ¶¶ 147 and 149 and regarding claim construction under the broadest reasonable interpretation for this claim element.

322. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

323. Also, as described in at least ¶¶ 299-307 above, Hite’s disclosure of video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to appended CID codes meets the recited limitation of “the specifically identified advertising data is customer specific advertising data” of this claim element.

324. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in

each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18).

325. Moreover, Hite describes that “The appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants” as reflected in “an algorithm” that “can be devised and downloaded to the display site” such that an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:18-27). Hite continues by disclosing “That algorithm is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” (emphasis added, see, for example, Ex. 1009 at 8:27-35).

326. Thus, Hite’s disclosure of an “algorithm” and “microcomputer program” that executes on a “processor” is a disclosure of “software” under the broadest reasonable interpretation of this claim. Note further that Hite’s description of the “analyzing” performed by the “Commercial Processor (CP) at

the display site” when executing the “algorithm” does not rely upon any “human intervention” and is thus performed “automatically” within Hite’s system.

327. Hite also discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the “context code” that “could be appended to the commercial's CID code” to be “compared with program identification codes appended to the program signals” such that a “commercial is displayed if it is in a specific channel or network or show” as in the example of “skiing equipment commercials would be shown during a skiing down hill racing competition” (emphasis added, see, for example, Ex. 1009 at 4:34-40).

328. Similarly, Hite discloses that Hite’s system can “provide advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers who are desirable prospects” (emphasis added, see, for example, Ex. 1009 at 3:24-28). For example, Hite describes “targeting, delivering and displaying electronic advertising messages (commercials) within specified programming in one or more pre-determined households (or on specific display devices) while simultaneously preventing a commercial from being displayed in other households or on other displays for which it is not intended” (emphasis

added, see, for example, Ex. 1009 at 5:29-36). And in another example, Hite describes “Commercial time or spots when addressable ads can be displayed will have a unique identifier code (CID)” wherein such “eligibility codes” can be applied “locally in local-avail spots” (emphasis added, see, for example, Ex. 1009 at 7:15-20). See also ¶¶ 167, 170-174, 176-179, 181, and 194-197 above.

329. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are alleged to have “software” alleged to “enable each individual TV commercial” to be “served up by household, street, subdivision, neighborhood, [etc.]” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 30-31). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

330. Thus, Hite discloses “The system of claim 1” (as described above) wherein “specifically identified advertising data” (video/audio combined commercials with appended Consumer CID codes) is “customer specific advertising data” (commercials that are targeted for consumption by a specific display site or consumer according to CID codes) and wherein “custom software

automatically analyzes one or more optimal advertising format scenarios” (for example, an algorithm or computer program executing on a commercial processor at a display site without human intervention analyses CID codes to match targeted attributes) based on “one or more selected factors including total number of customers, customer profile data, customer demographics, program schedules, product showcase schedules, available advertising formats, available advertising schedules, advertising rates, ad placement timing, or cost effectiveness” (for example, selected factors disclosed in Hite include at least cost-effectiveness, customer profile data, and customer demographics) and said “system transmits advertising format scenarios according to a selected placement option” (the appropriate CID codes and commercials with appended CID codes are sent from the Advertisement Administration Facility including its databases based upon the enumerated targeting criteria).

331. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

332. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 6

6. The system of claim 5 wherein preprogrammed or spontaneously programmed advertising format scenarios are automatically analyzed by said system.

6. The system of claim 5 wherein preprogrammed or spontaneously programmed advertising format scenarios are automatically analyzed by said system.

333. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 5 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 320-332 above.

334. See ¶ 149 above regarding claim construction under the broadest reasonable interpretation for this claim element.

335. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as

being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

336. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18). See also ¶¶ 325-328 above.

337. Hite also discloses a “registration code” wherein whenever a “commercial is successfully displayed, the registration code is communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (emphasis added, see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully

displayed, but it *has also been viewed, recognized, and acted upon*” (emphasis added, see, for example, Ex. 1009 at 5:11-16).

338. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are alleged to have “software” alleged to report “overall reach and frequency” of ad “impressions” including “hour and day of week” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 32-33). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

339. Thus, Hite discloses “The system of claim 5” (as described above) wherein “preprogrammed or spontaneously programmed advertising format scenarios” (for example, commercials with CID codes to match targeted attributes) are “automatically analyzed by said system” (for example, an algorithm executing on a commercial processor at a display site without human intervention analyses CID codes to match targeted attributes and communicates registration codes or certification codes back to the origination site).

340. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

341. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 7

7. The system of claim 5 wherein an advertiser places a selected advertising order which activates instant or time scheduled delivery of said selected advertising order to system customers through interaction with the transaction server.

7. The system of claim 5 wherein an advertiser places a selected advertising order which activates instant or time scheduled delivery of said selected advertising order to system customers through interaction with the transaction server.

342. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 5 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 320-332 above.

343. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements

using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

344. Hite also describes several additional capabilities that can be enabled by additional “codes” that are “appended to the CID code” and applicable to all “embodiments of the invention” (see, for example, Ex. 1009 at 4:19-23). These include a “frequency indicator code” that “would be loaded into a register at the display site” and “decremented each time the commercial is successfully displayed” such that “[w]hen the frequency indicator code register reaches zero, the commercial will no longer be displayed” (emphasis added, see, for example, Ex. 1009 at 4:24-32). Hite further describes a “sequencing code” that would enable “viewers” to “see a series of commercials in correct order” (emphasis added, see, for example, Ex. 1009 at 4:45-51).

345. Moreover, Hite describes operation of the “commercial processor” at the “display site” as including the situation where “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the

commercial's CID with that CID determined as appropriate for the display site” so that “[t]he broadcast with a break for a target commercial may then be transmitted with codes in the break” and “[i]f a match is found and only one commercial is stored, it may be displayed one or more times, depending on whether a frequency code is included” (emphasis added, see, for example, Ex. 1009 at 7:38-46). See also ¶¶ 167, 170-172, 174, 176-179, 181, and 194-197 above.

346. Hite discloses an “advertisement administrator and/or marketing organization which provides the commercials” from “time to time based on the nature of the commercials and the demographics of the viewers” in response “to information provided directly or indirectly by the viewer” as a “dynamic process” so that as “the situation of the viewers changes, the CIDs appropriate to those viewers also changes” (emphasis added, see, for example, Ex. 1009 at 8:28-35).

347. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” or hence “preferences set by the user” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

348. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" are alleged to have "storage to deliver targeted advertising" such that "commercials" are "spliced" into a "program when a viewer watches a time-shifter show" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 33-35). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

349. Thus, Hite discloses "The system of claim 5" (as described above) wherein "an advertiser" (for example, an advertisement administrator) "places a selected advertising order" (for example, by providing appropriate CID codes and commercials) which "activates instant or time scheduled delivery of said selected advertising order" (for example, timing of display for commercials is set by frequency and/or sequencing codes) to "system customers through interaction with the transaction server" (for example, by viewer reaction codes).

350. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

351. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 8

8. The system of claim 5 whereby the specifically identified advertising data may be instantly or by time schedule transmitted to a selective customer base that system monitoring indicates have available advertising space within a respective individually controlled and reserved advertising data storage section within a respective programmable local receiver unit.

8. The system of claim 5 whereby the specifically identified advertising data may be instantly or by time schedule transmitted to a selective customer base that system monitoring indicates have available advertising space within a respective individually controlled and reserved advertising data storage section within a respective programmable local receiver unit.

352. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 5 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 320-332 above.

353. See ¶ 146 above regarding claim construction under the broadest reasonable interpretation for this claim element.

354. As described in at least ¶¶ 259-268 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD)

with a unique address” to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the “the specifically identified advertising data” as well as the limitation of an “individually controlled and reserved advertising data storage section” of this claim element. Also, as described in at least ¶¶ 247-257 above, Hite’s disclosure of the “display site” as having a “digital recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” meets the limitation of a “programmable local receiver unit” of this claim element.

355. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

356. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” or hence “preferences set by the user” (emphasis added, see, for example, Ex. 1009 at 4:52-61).

357. Additionally, Hite describes a “registration code” wherein whenever a “commercial is successfully displayed, the registration code is communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully displayed, but it has also been viewed, recognized, and acted upon” (see, for example, Ex. 1009 at 5:11-16).

358. Hite also notes that there are “several options for the upstream transmission of registration or certification codes” including transmission “at the

time the commercial was successfully received” and storage “at the receive site” for relay “to the signal origination site upon request or at a pre-programmed more convenient time,” and that such “upstream communication” can occur via “two-way cable systems, radio transmissions, telephonic communication, or the physical conveyance of a printed report, a magnetic, optical, electronic or other recorded report” (see, for example, Ex. 1009 at 5:17-27).

359. Hite summarizes that “If a registration or certification code is included, that code is returned upstream to the signal origination site when commercials successfully play” so that such a “commercial will then be replaced with another” and “[i]f storage for multiple commercials is provided, they are downloaded and used appropriately” (emphasis added, see, for example, Ex. 1009 at 7:46-51). See also ¶¶ 167-169, 171-172, 176-178, 181, 191, 196 and 199 above.

360. Hite also claims a “system” with a “control device at the consumer display site” comprising “means in the control device for communicating with the central storage system and for selecting an advertisement from the central storage system for delivery to said display site for display intended for a particular consumer” (see, for example, Ex. 1009 at 15:8-20).

361. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘090 Patent (as Patent Owner alleges to be

relevant, see, for example, ¶ 139 above), I note that Patent Owner does not identify anything that specifically shows that Petitioner's accused products and services can actually "monitor" any "indicator" of any "available advertising space" within a DVR, but instead Patent Owner alleges that Petitioner's products and services are alleged to obtain "data related to" a subscriber's "viewing choices" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 35-37). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

362. Thus, Hite discloses "The system of claim 5" (as described above) whereby "specifically identified advertising data" (video/audio combined commercials with appended Consumer CID codes) may be "instantly or by time schedule transmitted to a selective customer base" (for example, the appropriate CID codes and commercials with appended CID codes are sent from the Advertisement Administration Facility including its databases based upon the enumerated targeting criteria) that "system monitoring indicates have available advertising space" (for example, based upon receipt of viewer reaction codes including registration or certification codes) within a "respective individually controlled and reserved advertising data storage section" (for example, the individually addressable digital recording device (RD) with a unique address or Video Storage Device) within a "respective programmable local receiver unit" (for

example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

363. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 17

17. The system of claim 5, wherein said local receiver communicates with a portable storage medium recorder/player for recording to a portable storage medium and the customer specific advertising data is recorded onto said portable storage medium.

17. The system of claim 5, wherein said local receiver communicates with a portable storage medium recorder/player for recording to a portable storage medium and the customer specific advertising data is recorded onto said portable storage medium.

364. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 5 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 320-332 above.

365. See ¶ 147 above regarding claim construction under the broadest reasonable interpretation for this claim element.

366. To the extent that “said local receiver” in this claim is an antecedent reference to the “programmable local receiver unit,” then as described in at least ¶¶ 247-257 above, Hite’s disclosure of the “display site” as having a “digital recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” meets the limitation of “said local receiver” of this claim element. Also, as described in at least ¶¶ 299-307 above, Hite’s disclosure of commercials that are targeted for consumption by a specific display site or consumer according to CID codes meets the antecedent limitation of “the customer specific advertising data” of this claim element.

367. To the extent that reference to “recorder/player” in this claim means a device that records or plays “a portable storage medium,” then this is fully disclosed in Hite for at least the following reasons.

368. First, Hite discloses that the “storage devices used to implement this invention can be of any form which is economical at the time of construction” wherein “Examples include magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (emphasis added, see, for example, Ex. 1009 at 12:6-11). Hite further discloses that “Under

some circumstances, all of the signals that would have normally been delivered via satellite or conveyed by electrical and/or optical connection are recorded on some suitable media 207 and physically delivered to the Media Origination Facility **300** of FIG. 1” and that “Media Origination Facility **300**” and “display site **400**” may be “co-located simplifying the transmission requirements for the processed commercials and CID codes” (emphasis added, see, for example, Ex. 1009 at 9:38-41, 12:51-55).

369. Second, Hite discloses that “processed commercials and CID codes” can be “conveyed to the display site 400 (reception site)” via “physical means 307 such as optical or magnetic tapes or disks” (emphasis added, see, for example, Ex. 1009 at 9:32-37). Hite further discloses a “display site” with a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” and that such commercials with CID codes “conveyed” as “signals” to the “display site” via “physical media 307” within “Optional Playback Device 464 which connects via a radio frequency connection **456A**, typically at television channel 3 or 4 to the antenna terminals **404** or cable input **406** of receiver **410**” (emphasis added, see, for example, Ex. 1009 at 6:63-66, 13:59-66, and FIG. 5).

370. Alternatively, to the extent that reference to “recorder/player” in this claim means a device that records or plays “a storage medium” and the

“recorder/player” itself is “portable,” then this is fully disclosed in Hite for at least the following additional reasons.

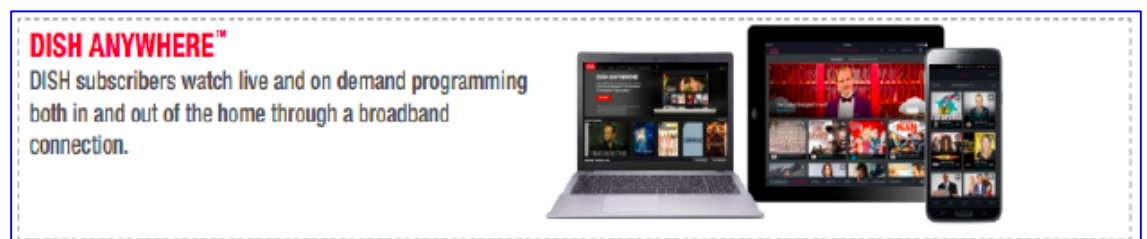
371. First, Hite discloses that at the “display site” the “The Commercial Processor **438** can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” wherein such a “digital recording device” is “installed at the display site in the television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 6:62-66, 14:28-30). At the alleged time of the invention of the ‘090 Patent, such enumerated devices above, particularly when connected via “DBS” service (a wireless satellite communications transmission service across the entire continental USA), were known to “record” or “play” multimedia content from “storage media” such as the “tapes, disks, and chips” described in Hite wherein both such devices and such “storage media” were “portable”.

372. Second, Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder Interface of "cable ready" products, and other display devices” wherein such “electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65). At the alleged

time of the invention of the '090 Patent, "personal computers" were known to "record" or "play" multimedia content from "storage media" such as the "tapes, disks, and chips" described in Hite wherein both such "personal computers" and such "storage media" were "portable".

373. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DISH Anywhere" capability that enables a subscriber to "transfer your recordings so you can watch them offline" on a variety of devices including a personal computer and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 37-40 including the excepted figure shown herein). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

374.



375. Thus, Hite discloses "The system of claim 5" (as described above) wherein "said local receiver" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the

video provider, or personal computer at the consumer display site) “communicates with a portable storage medium recorder/player for recording to a portable storage medium” (for example, the control device as enumerated above comprises a recording or playback device that interacts with tapes, disks, and/or chips) and “customer specific advertising data” (commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “recorded onto said portable storage medium” (for example, processed commercials and CID codes are recorded on such tapes, disks, and/or chips).

376. Or alternatively, Hite discloses “The system of claim 5” (as described above) wherein “said local receiver” (for example, a personal computer) “communicates with a portable storage medium recorder/player for recording to a portable storage medium” (for example, the same or another personal computer comprises a recording and playback device that interacts with tapes, disks, and/or chips) and “customer specific advertising data” (commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “recorded onto said portable storage medium” (for example, processed commercials and CID codes are recorded on such tapes, disks, and/or chips).

377. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

378. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘090 Patent: Claim 23

23. The system of claim 5 wherein said local receiver includes a signal processor which is capable of interpreting embedded control data associated with the customer specific advertising data for automatically processing and recording said data according to preprogrammed user suitability criteria.

23. The system of claim 5 wherein said local receiver includes a signal processor which is capable of interpreting embedded control data associated with the customer specific advertising data for automatically processing and recording said data according to preprogrammed user suitability criteria.

379. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill or Hite in view of Picco or Hite in view of Hill further in view of Picco renders obvious the recited Claim 5 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 320-332 above.

380. See ¶¶ 147-149 above regarding claim construction under the broadest reasonable interpretation for this claim element.

381. To the extent that “said local receiver” in this claim is an antecedent reference to the “programmable local receiver unit,” then as described in at least ¶¶ 247-257 above, Hite’s disclosure of the “display site” as having a “digital

recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” meets the limitation of “said local receiver” of this claim element. Also, as described in at least ¶¶ 299-307 above, Hite’s disclosure of commercials that are targeted for consumption by a specific display site or consumer according to CID codes meets the antecedent limitation of “the customer specific advertising data” of this claim element.

382. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18). Note further that Hite’s description of the “analyzing” performed by the “Commercial Processor (CP) at the display site” when executing the “algorithm” does not rely upon any “human intervention” and is thus performed “automatically” within Hite’s system.

383. Moreover, Hite describes that “The appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants”

as reflected in “an algorithm” that “can be devised and downloaded to the display site” such that an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:18-27). Hite continues by disclosing “That algorithm is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” (emphasis added, see, for example, Ex. 1009 at 8:27-35).

384. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5). Hite discloses that “commercials” are “sequentially transmitted to the display site prior to the time of their intended use” and “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (emphasis added, see, for example, Ex. 1009 at 7:37-42). In particular, Hite describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as

having “installed” within it “an individually addressable digital recording device (RD) with a unique address” that can store “CID codes chosen for a particular display site (consumer)” and can “hold one or more commercials prior to display” (see, for example, Ex. 1009 at 6:60-7:3).

385. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” or hence “preferences set by the user” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

386. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 230 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

387. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity

analysis of the asserted claims of the '090 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices include a processor" and unspecified "software" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1017 at pp. 40-41). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

388. Thus, Hite discloses "The system of claim 5" (as described above) wherein "said local receiver" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site) includes a "signal processor" (for example, a commercial processor within a control device as enumerated above) which is "capable of interpreting embedded control data" (for example, by comparing CID codes appended to commercials with CID codes stored locally) associated with "customer specific advertising data" (commercials that are targeted for consumption by a specific display site or consumer according to CID codes) for "automatically processing and recording said data" (for example, commercials and CID codes are processed for and recorded on a digital recording device) according to "preprogrammed user suitability criteria" (via matching the

commercial's CID with the CIDs based upon user-set preferences such as viewer reaction codes).

389. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

390. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or Picco and/or Hill further in view of Picco also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

**IX. ANTICIPATION AND/OR OBVIOUSNESS OF THE ‘494 PATENT
UNDER 35 U.S.C. §§ 102-103 IN VIEW OF HITE, HILL, AND/OR
BAJI**

A. Analysis of Hite, Hill, and Baji and the ‘494 Patent

391. In my opinion, Hite anticipates at least Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 of the ‘494 Patent for at least the reasons described herein.

392. In my opinion, Hite in view of one or more of the knowledge of a POSITA and/or Hill renders obvious at least Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 of the ‘494 Patent for at least the reasons described herein. Hite in view of one or more of the knowledge of a POSITA and/or Hill further in view of Baji render obvious claims

393. A general overview of Hite is given at ¶¶ 160-199 above.

394. In my opinion, Hite fully enabled a person of ordinary skill in the art to practice the subject matter described above as applied to Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 of the ‘494 Patent without undue experimentation at least to the extent that the ‘494 Patent is considered to provide an enabling written description of such claims and at least based on the standard that Patent Owner sets regarding alleged infringement contentions for Petitioner’s products with respect to such claims.

395. My specific analysis of Hite, as well as either or both of the knowledge of a POSITA or of Hill or of Baji, with respect to every claim element of Claims 1-7, 16-19, 23-28, 32-36, 39, 41, and 43 of the '494 Patent is given herein.

'494 Patent: Claim 1

1. A system for providing targeted advertising to a multimedia content end user, comprising:

at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data;

at least one processor; and

software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space and wherein said software further comprises a program to select particular advertising data suitable for targeting to at least one end user based upon predefined criteria data, wherein particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user.

1(a). A system for providing targeted advertising to a multimedia content end user, comprising:

396. In my opinion, this preamble claim element is a claim limitation.

397. See ¶ 150 above regarding claim construction under the broadest reasonable interpretation for this claim element.

398. As Hite summarizes in its “Background of the Invention” section, the Hite patent “relates to an electronic system and a process for enhancing advertising by delivering TV and radio commercials targeted to individual viewer's based desires and needs” (emphasis added, see, for example, Ex. 1009 at 1:7-10). An

exemplary claim 63 within Hite recites as a preamble “A system for targeting advertisements for display at a consumer display site” (emphasis added, see, for example, Ex. 1009 at 20:6-7).

399. More specifically, Hite discloses “Commercials can be delivered to specified homes or displays via either over-the-air broadcast or wired delivery systems” (see, for example, Ex. 1009 at 5:35-37) as well as “Data on these commercials” (see, for example, Ex. 1009 at 10:33-41). Hite also describes such commercials, as well as other programming, to be a combination of video and audio media types such as would be processed at a “Display Processor **444**” that outputs signals conveyed to both the “video display **450**” and the “Audio Reproducer **454**” (emphasis added, see, for example, Ex. 1009 at 14:49-58).

400. Additionally, Hite discloses that “sets of advertisements are prepared so that they are suitable for the transmission and storage means employed” and “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” such that the “messages are then delivered to the point of usage” (see, for example, Ex. 1009 at 3:41-45), or when “predetermined codes are transmitted to the display site and stored therein, commercials are then sequentially transmitted to the display site prior to the time of their intended use” (see, for example, Ex. 1009 at 7:35-38). Hite also describes a “registration code” that “is communicated back upstream to the signal

origination site” and can comprise “a viewer identification number” that “is included in the acknowledgment messages centrally collected” (emphasis added, see, for example, Ex. 1009 at 4:62-5:6). See also ¶¶ 167, 169-171, 176, 181, 187, and 194-196 above.

401. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “satellite television service” is a “system” that is alleged to be used “to deliver targeted advertising to Dish Network customers” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 43-51). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

402. Thus, Hite discloses a “system for providing targeted advertising” (system for targeting advertisements for display at a consumer display site) to a “multimedia content end user” (the consumer at the display site that views the video/audio combined commercials).

403. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

404. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

1(b): at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data;

405. See ¶151 above regarding claim construction under the broadest reasonable interpretation for this claim element.

406. Hite discloses that the “storage devices used to implement this invention can be of any form which is economical at the time of construction” wherein “Examples include magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (emphasis added, see, for example, Ex. 1009 at 12:6-11). Hite also describes the “display site” as having a “digital recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 6:62-66).

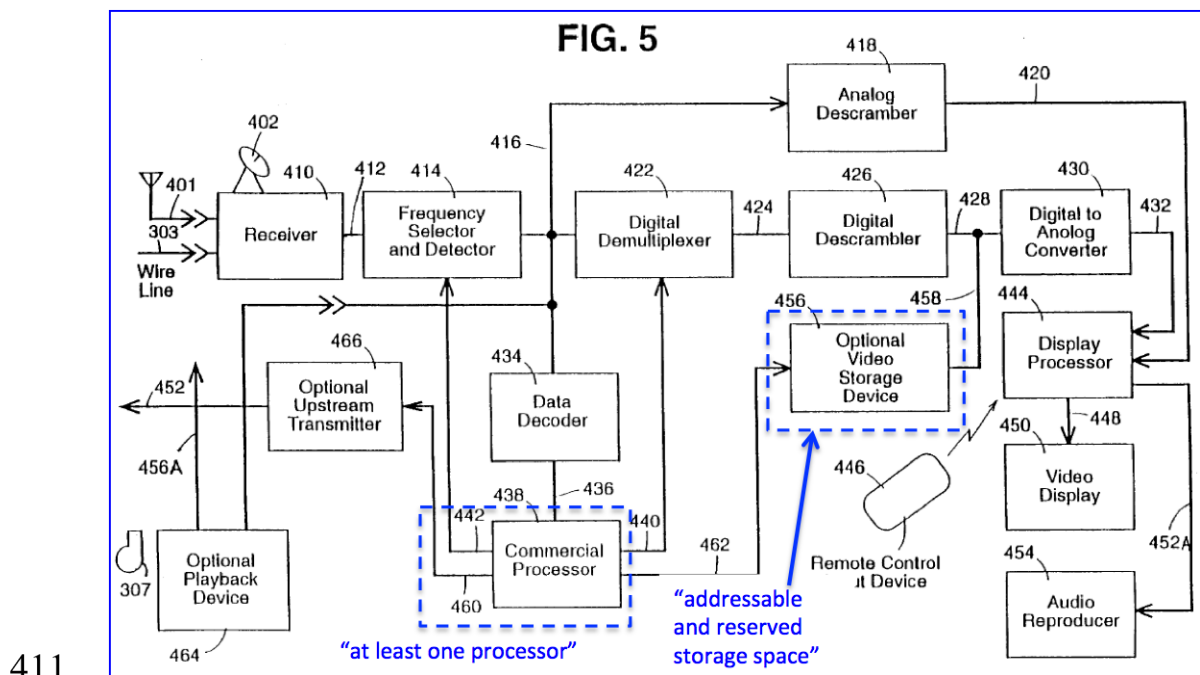
407. Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder Interface of "cable ready" products,

and other display devices” wherein such “electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65). At the alleged time of the invention of the ‘494 Patent, “personal computers” were known to “record” or “play” multimedia content to or from “storage devices” such as the “tapes, disks, and chips” comprised within or connected thereto such “personal computers”.

408. Hite discloses that “commercials” are “sequentially transmitted to the display site prior to the time of their intended use” and “[a]ppropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (see, for example, Ex. 1009 at 7:37-42). In particular, Hite describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as having “installed” within it “an individually addressable digital recording device (RD) with a unique address” that can store “CID codes chosen for a particular display site (consumer)” and can “hold one or more commercials prior to display” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3). Hite also discloses that one advantage of using a “digitized commercial” is “that it requires less memory to store” (emphasis added, see, for example, Ex. 1009 at 10:1-6).

409. Similarly, Hite describes “[c]ommercial time or spots” as “addressable ads” that “can be displayed” via “a unique identifier code (CID)” that is “part of the conditions required for displaying the addressable spot” (see, for example, Ex. 1009 at 7:15-18). Furthermore, Hite describes that “The commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “[i]f there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” (see, for example, Ex. 1009 at 7:24-28).

410. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated below).



412. Hite's "individually addressable digital recording device (RD) with a unique address" or "Video Storage Device" discloses "a data storage section set apart just for storing advertising data," (as the "addressable and reserved storage space for storing digital advertising data" is construed per broadest reasonable interpretation, see ¶ 151 above) at least because Hite is disclosing this storage device for "digitized" commercials as stored in "memory" that is "individually addressable" in a "digital recording device (RD) with a unique address" that stores only "CID codes" and/or the "commercials" with "CID codes" per my analysis herein (see, for example, ¶¶ 406-411 above).

413. Also, exemplary claim 63 within Hite recites "a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site" wherein such "control device" has "a storage device for storing the plurality of advertisements" and "a comparator for comparing a code appended to each advertisement" (emphasis added, see, for example, Ex. 1009 at 20:8-17).

414. Additionally, I note that Hite discloses no other "memory" or "storage device" at the "display site" other than the "individually addressable digital recording device (RD) with a unique address" or "Video Storage Device" and Hite discloses no other usage for such "memory" or "storage device" at the "display site" other than storing "CID codes" and/or the "commercials" with "CID codes,"

thereby disclosing that the “address” for such “memory” or “storage device” must be those “set apart just for storing advertising data”. See also ¶¶ 167-169, 176-178, 181, 191, 196 and 199 above.

415. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices come with memory, such as a hard drive, RAM, and Flash Memory” and further that such “memory” or “storage device” hold “targeted ads” (as well as everything else in the DVR system) and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 51-54). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

416. Thus, Hite discloses at least one “storage device” (for example, tapes, disks, and/or chips) wherein “at least one of said at least one storage device” (for example, the tapes, disks, and/or chips within a device at the consumer display site such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer) comprises “at least one addressable and reserved storage space for storing digital advertising data” (the individually addressable digital recording device (RD) with a unique address or

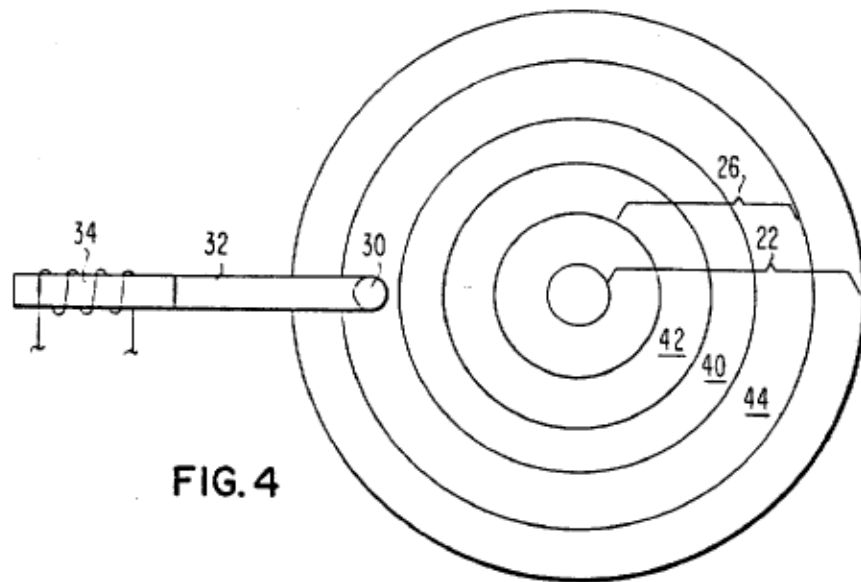
Video Storage Device that only stores CID codes and/or commercials with CID codes).

417. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

418. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

419. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity

or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



420.

421. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the

allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

422. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

423. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1” (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

424.

425. Thus, Hill discloses “at least one storage device” (direct access data storage device) wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space storing” digital data (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), and Hite discloses “digital advertising data” (local storage of a advertising data in hard disk drive).

426. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would

have looked to Hill's high access partition to further address a need identified by Hite to increase storage efficiency and accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers" (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite's "commercial storage and playback device" and/or the "optional video storage device" (see ¶¶ 202-205 above).

427. Baji also discloses a system and components for processing "commercial insertion on the side of a subscriber system" in which "the system sends a video data commercial requested by the subscriber" as provided by "access sequence table 155 disposed in a main control unit 106" where the "commercial insertion mode is defined in conformity with Table 1" (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below).

TABLE 1

<u>Advertisement insertion modes</u>				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

428.

429. Baji discloses that, in the “subscriber system” at the display site, there is “a commercial buffer 160 [to] temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below). Because the subscriber system of Baji includes separate storage spaces for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising.

430. Thus, Baji discloses “an end user receiver” (subscriber system) and “wherein said at least one storage device that comprises said at least one

addressable and reserved storage space is located within said end user receiver”
(commercial buffer that stores commercials for insertion into program content).

431. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji’s use of commercial buffer storage to eliminate the need for simultaneous distribution of commercial and program content to further address a need identified by Hite to accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers” (see, for example, Ex. 1009 at 8:9-29; Ex. 1025 at 8:9-48). Furthermore, the combination yields the completely predictable and desirable result that separating commercial and program content would avoid unnecessary complication of the transmission of content to individual end users. (see ¶¶ 213-217).

1(c): at least one processor;

432. Hite specifically discloses a “Commercial Processor” **438** can cause commercial signals to be stored or played back from the Optional Video Storage

Device **456**” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated in ¶ 411 above).

433. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18).

434. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

435. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices include a processor” such as the “Broadcom BCM7420

processor” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 54-55). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

436. Thus, Hite discloses at least one “processor” (for example, commercial processor within a device at the consumer display site such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer).

437. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

438. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

1(d): software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space and wherein said software further comprises a program to select particular advertising data suitable for targeting to at least one end user based upon predefined criteria data, wherein particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user.

439. See ¶¶ 151-153 above regarding claim construction under the broadest reasonable interpretation for this claim element.

440. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored in Hite meets the antecedent limitations of the “said at least one addressable storage space” and the “said at least one addressable and reserved storage space” of this claim element. Also, as described in at least ¶¶ 432-437 above, Hite’s disclosure of the “commercial processor” meets the antecedent limitation of the “said at least one processor” of this claim element.

441. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

442. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID

transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18).

443. Moreover, Hite describes that “[t]he appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants” as reflected in “an algorithm” that “can be devised and downloaded to the display site” such that an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the downloaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:18-27). Hite continues by disclosing “That algorithm is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” (emphasis added, see, for example, Ex. 1009 at 8:27-35).

444. Thus, Hite’s disclosure of an “algorithm” and “microcomputer program” that executes on a “processor” is a disclosure of “software” under the broadest reasonable interpretation of this claim.

445. Hite also discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the “context code” that “could be appended to the commercial's CID code” to be “compared with program identification codes appended to the program signals” such that a “commercial is displayed if it is in a specific channel or network or show” as in the example of “skiing equipment commercials would be shown during a skiing down hill racing competition” (emphasis added, see, for example, Ex. 1009 at 4:34-40).

446. Similarly, Hite discloses that Hite’s system can “provide advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers who are desirable prospects” (emphasis added, see, for example, Ex. 1009 at 3:24-28). For example, Hite describes “targeting, delivering and displaying electronic advertising messages (commercials) within specified programming in one or more pre-determined households (or on specific display devices) while simultaneously preventing a commercial from being displayed in other households or on other displays for which it is not intended” (emphasis added, see, for example, Ex. 1009 at 5:29-36). And in another example, Hite describes “[c]ommercial time or spots when addressable ads can be displayed will

have a unique identifier code (CID)” wherein such “eligibility codes” can be applied “locally in local-avail spots” (emphasis added, see, for example, Ex. 1009 at 7:15-20).

447. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated in ¶ 278 above). In particular, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary” (emphasis added, see, for example, Ex. 1009 at 7:24-30).

448. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

449. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

450. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” have “software” alleged to “enable each individual TV commercial to have its own unique criteria” for display based upon “viewer patterns, Census data, ZIP+4, and even remote control usage” and alleged to “enable each individual TV commercial” to be “served up by household, street, subdivision, neighborhood, [etc.]” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 55-60). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

451. Thus, Hite discloses “software implemented by said at least one processor” (for example, commercial processor within a device at the consumer display site such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer executes an algorithm or microcomputer program) wherein “said software comprises a program to reserve said at least one addressable storage space” (for example, the algorithm or microcomputer program executes on the commercial processor to selectively store targeted commercials to the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and wherein “said software further comprises a program to select particular advertising data suitable for targeting to at least one end user” (for example, the algorithm or microcomputer program executes on the commercial processor to select commercials that are targeted for consumption by a specific display site or consumer according to CID codes) based upon “predefined criteria data” (for example, certain CID codes directed to customer demographics or cost effectiveness), wherein “particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user” (for example, the commercials that are targeted for consumption by a specific display site or consumer according to CID codes are stored in the individually addressable digital recording device

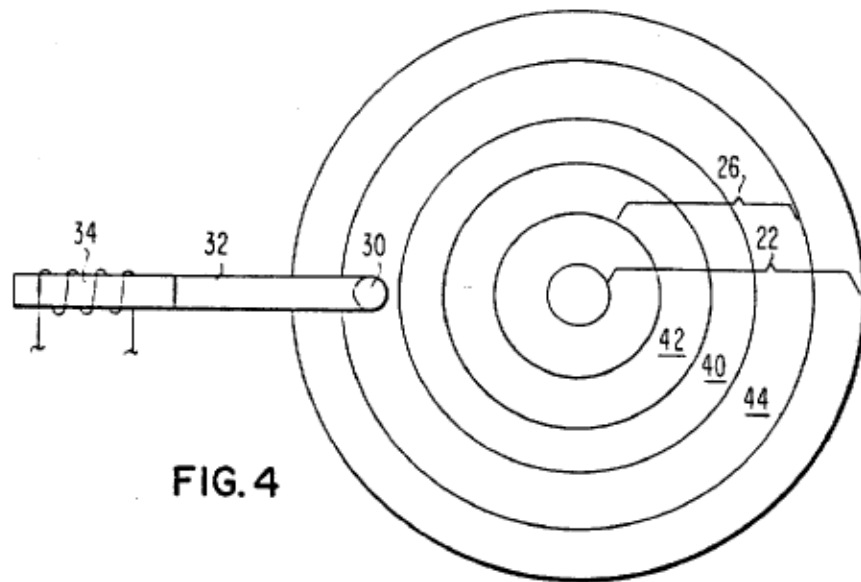
(RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes to be displayed for or hence accessed by the consumer at the display site).

452. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

453. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

454. Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number

of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



455.

456. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the

allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

457. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

458. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

459.

460. Hill discloses “a controller 10 and a plurality of storage devices 20, 25, 27, 29, 31” and that “two partitions” may be “defined to the system processor as two unique devices, each having a unique identifier” (see, for example, Ex. 1010 at 3:44-45, 7:9-11). The “‘storage characteristics’ of data” in Hill are “determined by applications which access the data”

461. Thus, Hill discloses “software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space and wherein said software further comprises a program to select particular advertising data suitable” (applications that access stored data implemented by system processor and/or control processor, where the application determines the data access density, and thus storage characteristics of the data used to determine data storage location by the system processor and/or control processor) where the “data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and

where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition).

462. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would have looked to Hill's high access partition to further address a need identified by Hite to increase storage efficiency and accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers." (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite's "commercial storage and playback device" and/or the "optional video storage device." (see ¶¶ 202-205 above)

'494 Patent: Claim 2

2. The system of claim 1, further comprising an end user receiver, wherein said at least one storage device that comprises said at least one addressable and reserved storage space is located within said end user receiver.

2. The system of claim 1, further comprising an end user receiver, wherein said at least one storage device that comprises said at least one addressable and reserved storage space is located within said end user receiver.

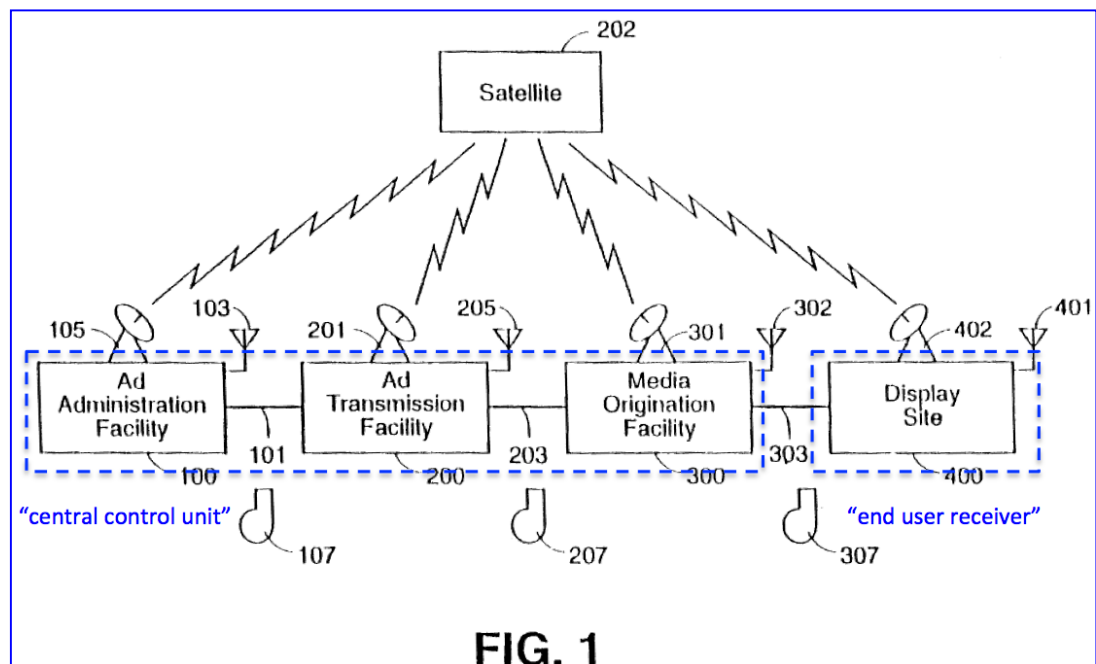
463. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396-461.

464. See ¶ 151 regarding claim construction under the broadest reasonable interpretation for this claim element.

465. As described in at least ¶¶ 405-417 above, Hite's disclosure of the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the "said at least one addressable and reserved storage space" of this claim element and Hite's disclosure of the "tapes, disks, and/or chips" meets the antecedent limitation of the "said at least one storage device" of this claim element.

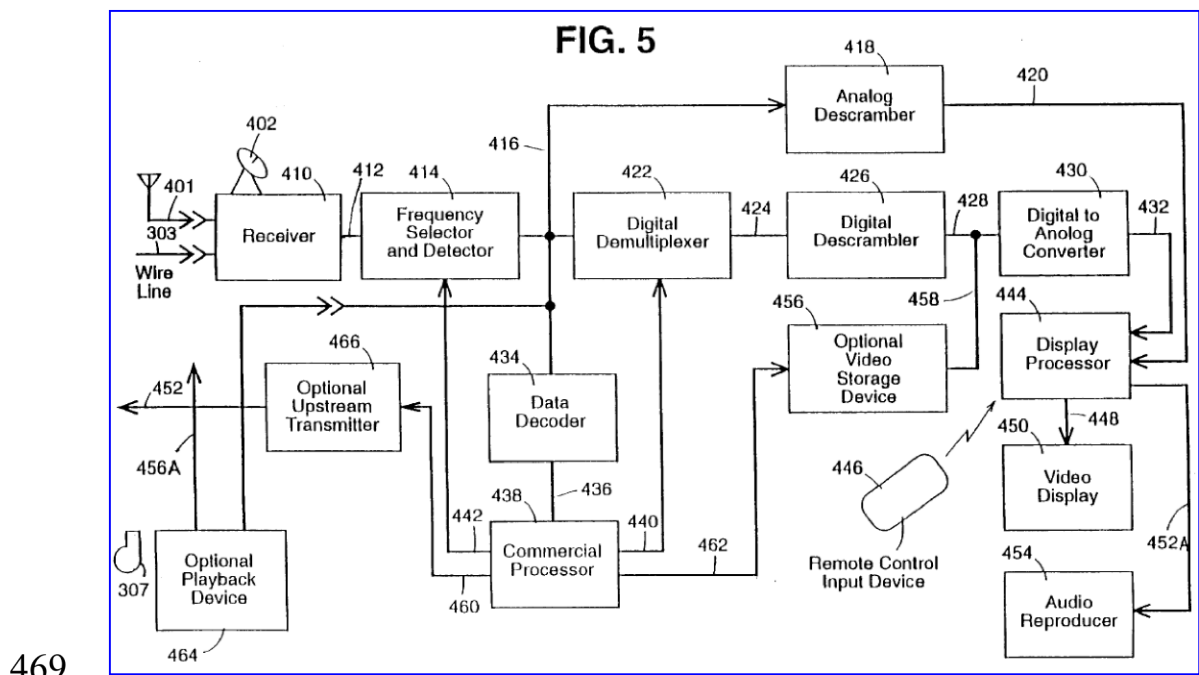
466. Hite discloses that the automated delivery of targeted commercials to a "consumer display site" as described, for example, in ¶ 400 above is based upon

an interface that “conveys the signals by electrical and/or optical connection **326** to an antenna for over the air transmission and or conveys the signals by electrical and/or optical wire line connection **303** to a *plurality of Display Sites 400* of FIG. 1” from the co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” (emphasis added, see, for example, Ex. 1009 at 9:38-41, 13:21-25, and FIG. 1 as annotated below). Hite also describes each “*display site*” as having a “*digital recording device*” within a “*television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)*” (emphasis added, see, for example, Ex. 1009 at 6:62-66).



More specifically, Hite discloses that at each “Display Site,” “Signals are conveyed by electrical and/or optical connection 303 and/or by radio via

antenna 401 and/or via satellite via satellite antenna 402 to a receiver 410” (emphasis added, see, for example, Ex. 1009 at 13:58-62, FIG. 5 as reproduced below). In particular, such received “signals” for such “commercials” with “CID codes” from the co-located combination of an “Advertisement Administration Facility,” an “Advertisement Transmission Facility,” and/or a “Media Origination Facility” are “processed” at each “Display Site” of FIG. 5 in at least the “Commercial Processor 438” and the “Display Processor 444” as well as recorded in the “Video Storage Device 456” (see, for example, Ex. 1009 at 14:28-30, 14:54-58, FIG. 5 as reproduced below). For example, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as reproduced below).



469.

470. Furthermore, Hite describes that “predetermined codes are transmitted to the display site and stored therein, commercials are then sequentially transmitted to the display site prior to the time of their intended use” and that “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” (emphasis added, see, for example, Ex. 1009 at 7:35-42).

471. Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder Interface of "cable ready" products, and other display devices” wherein such “electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65).

472. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17). See also ¶¶ 167-169, 176, 181, 191, 194, 196 and 199 above.

473. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" are "receivers" and have "memory" that "is located internally" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 60-61). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

474. Thus, Hite discloses "The system of claim 1" (as described above) further comprising "an end user receiver" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site that receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), wherein "said at least one storage device" (for example, tapes, disks, and/or chips) that comprises "said at least one addressable and reserved storage space" (for example, the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) is "located within said end

user receiver” (for example, the digital recording device or Video Storage Device is described and depicted as being within the control device at the consumer display site).

475. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

476. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

477. Baji also discloses a system and components for processing “commercial insertion on the side of a subscriber system” in which “the system sends a video data commercial requested by the subscriber” as provided by “access sequence table 155 disposed in a main control unit 106” where the “commercial insertion mode is defined in conformity with Table 1” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below).

478.

TABLE 1				
Advertisement insertion modes				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

479. Baji discloses that, in the “subscriber system” at the display site, there is “a commercial buffer 160 [to] temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below). Because the subscriber system of Baji includes separate storage spaces for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising.

480. Thus, Baji discloses “at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data” (commercial buffer that stores commercials for insertion into program content).

481. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references

are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji's use of commercial buffer storage to eliminate the need for simultaneous distribution of commercial and program content to further address a need identified by Hite to accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers" (see, for example, Ex. 1009 at 8:9-29; Ex. 1025 at 8:9-48). Furthermore, the combination yields the completely predictable and desirable result that separating commercial and program content would avoid unnecessary complication of the transmission of content to individual end users. (see ¶¶ 213-217 above).

'494 Patent: Claim 3

3. The system of claim 2, further comprising a central control unit in communication with said end user receiver, wherein said central control unit processes profile data associated with the at least one end user to generate the predefined criteria data, and manages delivery of the particular advertising data to said end user receiver for automatically storing the particular advertising data in said at least one addressable and reserved storage space.

3. The system of claim 2, further comprising a central control unit in communication with said end user receiver, wherein said central control unit processes profile data associated with the at least one end user to generate the predefined criteria data, and manages delivery of the particular advertising data to said end user receiver for automatically storing the particular advertising data in said at least one addressable and reserved storage space.

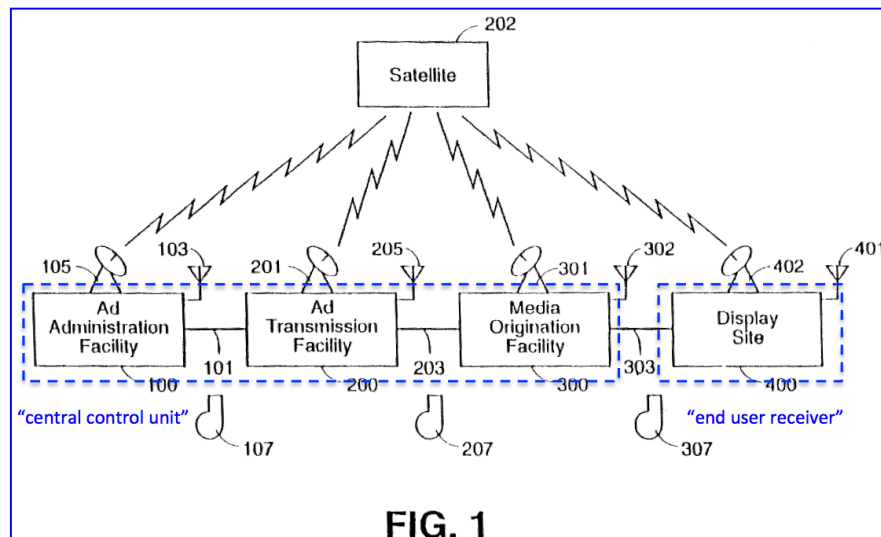
482. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 2 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 463 - 476.

483. See ¶¶ 151 and 152-154 above regarding claim construction under the broadest reasonable interpretation for this claim element.

484. As described in at least ¶¶ 405-417 above, Hite's disclosure of the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the "said at least one addressable and reserved storage space" of this claim element. As described in at least ¶¶ 463-475 above, Hite's disclosure of the "control device" such as a "television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer" at the "consumer display site" in Hite meets the antecedent limitation of the "said end user receiver" of this claim element. As described in at least ¶¶ 439-452 above, Hite's disclosure of "certain CID codes directed to customer demographics or cost effectiveness" in Hite meets the antecedent limitation of the "predefined criteria data" of this claim element and Hite's disclosure of "commercials that are targeted for consumption by a specific

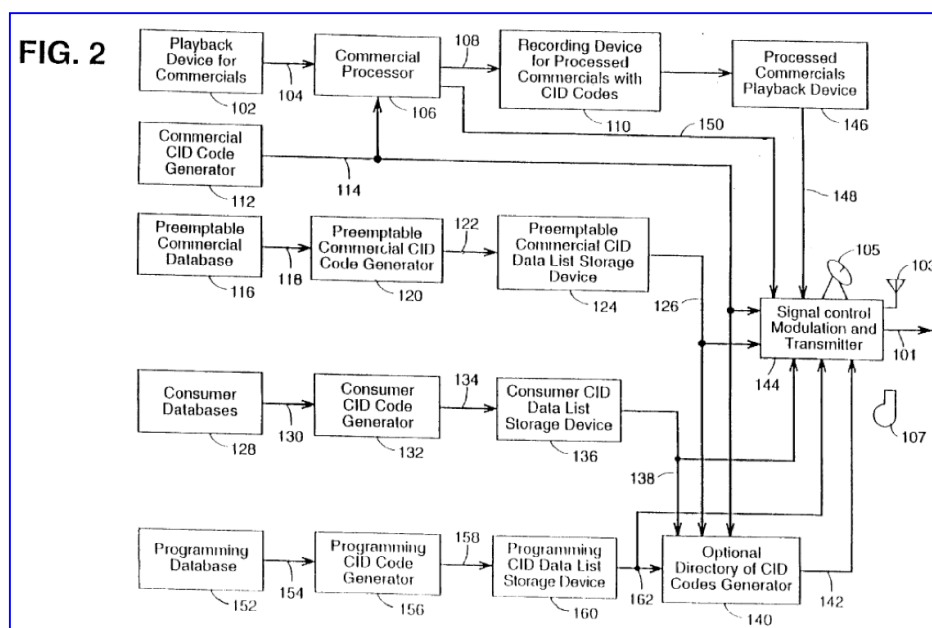
display site or consumer according to CID codes” in Hite meets the antecedent limitation of the “particular advertising data” of this claim element.

485. Hite discloses that the automated delivery of targeted commercials to a “consumer display site” can be performed in a co-located combination of an “Ad Administration Facility,” an “Ad Transmission Facility,” and/or a “Media Origination Facility” and that any or all of these “facilities 100, 200, 300, and 400 may be co-located simplifying the transmission requirements for the processed commercials and CID codes” (see, for example, Ex. 1009 at 8:52-59, 9:38-41, and FIG. 1 as annotated below).



487. More specifically, Hite discloses the “Ad Administration Facility” in terms of “databases” that are used to match “commercials” to “programming” and “consumers” (see, for example, Ex. 1009 at 10:33-11:45 and FIG. 2 as reproduced below). In particular, the “Preemptable Commercial Database 116 contains lists of

commercials which can be preempted” for targeted delivery based upon the “Customer Database 128 contains lists of consumers who would be viewing or listening to programming and would be served by commercials which match their needs and wants” wherein this “list is supplied by agencies which have gathered data on the consumers and have created algorithms for determining which commercials are most appropriate for those consumers” such that the “combination of the algorithms and the data yield the Consumer CID codes” (emphasis added, see, for example, Ex. 1009 at 10:33-35, 10:54-62). Hite specifically discloses “Commercials can be delivered to specified homes or displays via either over-the-air broadcast or wired delivery systems” (emphasis added, see, for example, Ex. 1009 at 5:35-37).



488.

489. Hite also discloses a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

490. Additionally Hite discloses that the system operates without human intervention, for example, when “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” so that the “commercial processor” can “store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site,” thereby enabling the “commercial processor in the home” to “look for the CID in each incoming commercial at a break during a broadcast program” and “[i]f there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 7:24-28, 7:38-42).

491. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that

Petitioner's "digital broadcast operations facilities" are a "Remote Server" that communicates with "DVR Devices" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 61-62). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

492. Thus, Hite discloses "The system of claim 2" (as described above) further comprising a "central control unit" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that is "in communication with said end user receiver" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), wherein "said central control unit processes profile data associated with the at least one end user to generate the predefined criteria data" (for example, the Advertisement Administration Facility processes CID codes such as viewer reaction codes to generate certain CID codes directed to customer demographics or cost effectiveness), and "manages delivery of the particular advertising data to said end user receiver for automatically storing the

particular advertising data in said at least one addressable and reserved storage space” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site where such commercials are stored without human intervention in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes).

493. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

494. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 4

4. The system of claim 1, wherein the suitability criteria data comprises a key word.

4. The system of claim 1, wherein the suitability criteria data comprises a key word.

495. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396-461.

496. See ¶ 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

497. As described in at least ¶¶ 439-452 above, Hite's disclosure of "certain CID codes directed to customer demographics or cost effectiveness" in Hite meets the antecedent limitation of the "suitability criteria data" (assumed to be synonymous with the "predefined criteria data" per the broadest reasonable construction of ¶ 155 above) of this claim element.

498. Hite discloses "A series of viewer reaction codes can be included to cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction" wherein the "relevant commercials could be for more detailed information about the same product or service" or "Alternatively, they could be for products or services which are likely to be of interest to the viewer based on the viewer's responses" (emphasis added, see, for example, Ex. 1009 at 4:52-58).

499. More specifically, Hite discloses “a viewer who requests more information about children's aspirin may also be offered a subsequent commercial on children's chewable vitamins” (emphasis added, see, for example, Ex. 1009 at 4:58-61). Hite also discloses that advertisement may be “conditionally preemptable,” in which there are limitations on whether a locally-stored targeted advertisement may be inserted, such as where “a competitor’s product may not be used to preempt” (e.g., “[o]ne brand of automobile may be precluded from substituting for another brand of automobile”). Ex. 1009 at 3:46-56.

500. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner “obtains data related to your viewing choices” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 63-65). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

501. Thus, Hite discloses “The system of claim 1” (as described above) wherein the “suitability criteria data” (for example, certain CID codes directed to customer demographics or cost effectiveness) comprises a “key word” (for

example, a viewer reaction code response identifies a specific word or phrase such as children's aspirin).

502. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

503. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

'494 Patent: Claim 5

5. The system of claim 1, wherein the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, monitoring a broadcast time schedule, examining end user profile data, examining demographics, and combinations thereof.

5. The system of claim 1, wherein the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, monitoring a broadcast time schedule, examining end user profile data, examining demographics, and combinations thereof.

504. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396-461.

505. See ¶ 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

506. As described in at least ¶¶ 439-452 above, Hite's disclosure of "certain CID codes directed to customer demographics or cost effectiveness" in Hite meets the antecedent limitation of the "suitability criteria data" (assumed to be synonymous with the "predefined criteria data" per the broadest reasonable construction of ¶ 155 above) of this claim element.

507. Hite discloses "A series of viewer reaction codes can be included to cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction" wherein the "relevant commercials could be for more detailed information about the same product or service" or "Alternatively, they could be for products or services which are likely to be of interest to the viewer based on the viewer's responses" (emphasis added, see, for example, Ex. 1009 at 4:52-58).

508. More specifically, Hite discloses “a viewer who requests more information about children's aspirin may also be offered a subsequent commercial on children's chewable vitamins” (emphasis added, see, for example, Ex. 1009 at 4:58-61).

509. Also, Hite discloses an “algorithm” that “responds to information provided directly or indirectly by the viewer” such that “As the situation of the viewers changes, the CIDs appropriate to those viewers also changes” (emphasis added, see, for example, Ex. 1009 at 8:31-35). More specifically, Hite discloses as an example a situation where “as children are born, certain products and services are of interest” but “As the children grow and mature, products and services previously interesting are replaced with those appropriate for older children” (emphasis added, see, for example, Ex. 1009 at 8:35-38).

510. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner provides absolutely no specific identification of Petitioner’s products and/or services alleged to meet the limitations of this claim element but instead Patent Owner refers to the text of Claim 6 of the ‘494 Patent as “Claim 5” (see, for example, Ex. 1018 at pp.

65-67). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

511. Thus, Hite discloses "The system of claim 1" (as described above) wherein the "suitability criteria data" (for example, certain CID codes directed to customer demographics or cost effectiveness) is "collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, monitoring a broadcast time schedule, examining end user profile data, examining demographics, and combinations thereof" (for example, a viewer reaction code response identifies a specific "key word" or phrase such as children's aspirin, a viewer reaction code response identifies a specific "activity," demographic information such as the age of children is examined over time).

512. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

513. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also

renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 6

6. The system of claim 1, wherein the particular advertising data is stored in said at least one addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content for presenting the particular advertising to the at least one end user during playback of the digital media content.

6. The system of claim 1, wherein the particular advertising data is stored in said at least one addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content for presenting the particular advertising to the at least one end user during playback of the digital media content.

514. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396 - 461.

515. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

516. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are

stored in Hite meets the antecedent limitation of the “said at least one addressable and reserved storage space” of this claim element. As described in at least ¶¶ 439-452 above, Hite’s disclosure of “commercials that are targeted for consumption by a specific display site or consumer according to CID codes” in Hite meets the antecedent limitation of the “particular advertising data” of this claim element.

517. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

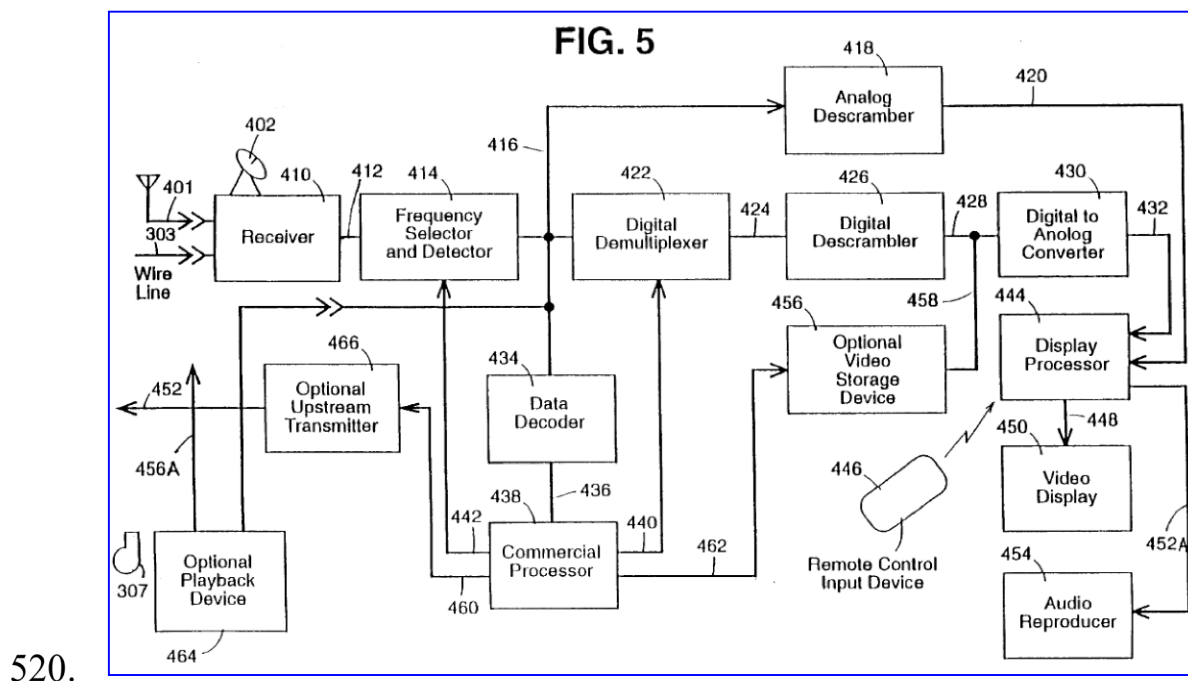
518. Additionally, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it

from the ad queue as necessary,” thereby subsequently processing the target commercials according to content rules after storing them first (emphasis added, see, for example, Ex. 1009 at 7:24-30).

519. Hite also discloses specific exemplary circuitry within the “control device” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” or “personal computer” at the “consumer display site” as depicted in FIG. 5 of Hite as reproduced below. More specifically, Hite describes FIG. 5 wherein “receiver **410** preprocesses the signal and conveys it by electrical and/or optical connection **412** to a Frequency Selector and Detector **414** which then conveys the selected and demodulated baseband signals by electrical and/or optical connection **416** to a Data Decoder **434** which extracts data required by this invention” (see, for example, Ex. 1009 at 13:66-14:4). Continuing, Hite describes that “Commercial Processor **438** can select the frequencies received by the system by signals conveyed by electrical and/or optical connection **442** to Frequency Selector and Detector **414**” and “can select the data stream processed by the digital portions of the system by the system by signals conveyed by electrical and/or optical connection **440** to the Digital Demultiplexer **422**” (emphasis added, see, for example, Ex. 1009 at 14:14-20). Moreover, Hite specifically discloses that “Commercial Processor **438** can cause commercial

signals to be stored or played back from the Optional Video Storage Device 456”

(emphasis added, see, for example, Ex. 1009 at 14:28-30).



Continuing in reference to FIG. 5 as reproduced above, Hite describes “[d]igital signals which the customer is authorized to receive are descrambled and conveyed by electrical and/or optical connection 428 to a Digital to Analog Converter 430 which converts these signals into a form suitable for further processing and display” and “playback” of “certain commercials” stored in “Video Storage Device 456” under the “control of signals conveyed by electrical and/or optical connection 462 from the Commercial Processor 438,” thereby merging at “connection 428” under processor control the digital media streams with the targeted commercials at appropriate commercial breaks (emphasis added, see, for example, Ex. 1009 at 14:33-46). Hite also discloses that the algorithm for inserting

targeted advertisements “is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” described as a “dynamic process.” (see, for example, Ex. 1009 at 8:27-35).

522. Hite also describes several additional capabilities that can be enabled by additional “codes” that are “appended to the CID code” and applicable to all “embodiments of the invention” (see, for example, Ex. 1009 at 4:19-23). These include a “frequency indicator code” that “would be loaded into a register at the display site” and “decremented each time the commercial is successfully displayed” such that “[w]hen the frequency indicator code register reaches zero, the commercial will no longer be displayed” (emphasis added, see, for example, Ex. 1009 at 4:24-32). Hite further describes a “sequencing code” that would enable “viewers” to “see a series of commercials in correct order” (emphasis added, see, for example, Ex. 1009 at 4:45-51).

523. Moreover, Hite describes operation of the “commercial processor” at the “display site” as including the situation where “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” so

that “[t]he broadcast with a break for a target commercial may then be transmitted with codes in the break” and “[i]f a match is found and only one commercial is stored, it may be displayed one or more times, depending on whether a frequency code is included” (emphasis added, see, for example, Ex. 1009 at 7:38-46). See also ¶¶ 167, 170-172, 174, 176-179, 181, and 194-197 above.

524. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement and a code stored in the control device and for displaying an advertisement in a break in the program when the codes match” (emphasis added, see, for example, Ex. 1009 at 20:8-20).

525. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner provides the text of this Claim 6 of the ‘494 Patent as “Claim 5” and alleges that Petitioner’s “DVR devices” use “software” that performs “smart sequencing” for “dynamic insertion” of “ads” and thus in Patent Owner’s view meets the limitations of this claim

element (see, for example, Ex. 1018 at pp. 65-67). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

526. Thus, Hite discloses "The system of claim 1" (as described above) wherein the "particular advertising data" (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is "stored in said at least one addressable and reserved storage space" (for example, by storing commercials in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and wherein "said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content for presenting the particular advertising to the at least one end user during playback of the digital media content" (for example, commercial processor in combination with receiver, frequency selector and detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site).

527. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

528. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 7

7. The system of claim 1, further comprising an end user receiver associated with the at least one end user, wherein the particular advertising data is stored in said at least one addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content in real time.

7. The system of claim 1, further comprising an end user receiver associated with the at least one end user, wherein the particular advertising data is stored in said at least one addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content in real time.

529. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396-461.

530. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

531. As described in at least ¶¶ 405-417 above, Hite's disclosure of the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the "said at least one addressable and reserved storage space" of this claim element. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element. As described in at least ¶¶ 463-475 above, Hite's disclosure of the "control device" such as a "television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer" at the "consumer display site" in Hite meets the limitation of the "end user receiver associated with the at least one end user" of this claim element.

532. Otherwise the remaining limitations of this Claim 7 of the '494 Patent are fully disclosed in Hite as described above in relation to the limitations of Claim 6 of the '494 Patent, or thus see ¶¶ 517-524 above. Hite also discloses that the particular time "when addressable ads can be displayed will have a unique identifier code (CID)," which "will be part of the conditions required for

displaying the addressable spot,” and if the “commercial processor in the home” receives “a CID at a break, the processor would apply the display rules for the stored, addressable ads,” determine if there was a suitable ad, and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary” thereby disclosing “real time” operation for “data stream” at the “receiver” and the “playback” at the merge “connection 428” (see, for example, Ex. 1009 at 7:15-30 and ¶¶ 519-521 above). Hite also discloses that the algorithm for inserting targeted advertisements “is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” described as a “dynamic process” (see, for example, Ex. 1009 at 8:27-35).

533. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner provides the text of this Claim 7 of the ‘494 Patent as “Claim 6” and alleges that Petitioner’s “DVR devices” use “software” that delivers “marketing messages” during “commercial breaks” and thus in Patent Owner’s view meets the limitations of this claim

element (see, for example, Ex. 1016 at pp. 65-67). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

534. Thus, Hite discloses "The system of claim 1" (as described above) further comprising "an end user receiver associated with the at least one end user" (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site that receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), wherein the "particular advertising data" (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is "stored in said at least one addressable and reserved storage space" (for example, by storing commercials in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and wherein "wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content in real time" (for example, commercial processor in combination with receiver, frequency selector and detector, digital

demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a real time received digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site in real time).

535. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

536. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 16

16. The system of claim 1, wherein the particular advertising data stored in said addressable and reserved storage space is located in a first end user receiver, wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver, wherein the central control unit communicates with the second end user receiver, and wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver.

16. The system of claim 1, wherein the particular advertising data stored in said addressable and reserved storage space is located in a first end user receiver, wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver, wherein the central control unit communicates with the second end user receiver, and wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver.

537. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 1 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 396 - 461.

538. See ¶¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

539. As described in at least ¶¶ 405-417 above, Hite's disclosure of the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the "said at least one addressable and reserved storage space" of this claim element. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element.

540. As described in at least ¶¶ 463-475 above, Hite's disclosure of the "control device" such as a "television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer" at the "consumer display site" in Hite meets the limitation of either of the "first end user receiver" or the "second end user receiver" of this claim element. Note specifically

that Hite discloses multiple “devices” that can each be an “end user receiver” and can each reside at a “display site,” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer”. Hite further discloses that advertisements are delivered to “a plurality of Display Sites 400 of FIG. 1” (see, for example, Ex. 1009 at 13:19-25). In particular, claim 35 of Hite specifically recites “first and second display sites each having the control device,” which are used for “delivering a program to said first and second display sites,” and “selectively displaying a first advertisement at said first site during a first break intended for a first consumer” and “simultaneously selectively displaying a second advertisement during said first break different than said first advertisement at said second site intended for a second consumer based on commands from the respective control devices” (see, for example, Ex. 1009 at 17:33-54).

541. Furthermore, Hite discloses “viewer identification” that can be used to either associate or disassociate various such devices at a “display site”. For example, Hite describes a “registration code” that “is communicated back upstream to the signal origination site” and can comprise “a viewer identification number” that “is included in the acknowledgment messages centrally collected” (emphasis added, see, for example, Ex. 1009 at 4:62-5:6).

542. Moreover, Hite notes “[t]he apparatus at the viewing site can store and process CIDs for multiple individuals at the viewing site” so that “[w]hen the viewer identifies himself or herself either directly or indirectly, the commercials appropriate to that individual are presented” (emphasis added, see, for example, Ex. 1009 at 8:39-43). Therefore, Hite clearly discloses multiple devices at the display site, or hence at least a “first end user receiver” and a “second end user receiver,” as well as “viewer identification” that can be used to “associate” such “end user receivers”. Hite thus also discloses that since multiple devices at the display site are “associated” via “viewer identification,” then delivery of the same “commercials appropriate to that individual” is managed via the “central” “signal origination site” of Hite such as the “Advertisement Administration Facility”.

543. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that communicates with “end user receivers,” whether “first” or “second” (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility),

and “manages delivery of the particular advertising data to said end user receivers,” whether “first” or “second” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

544. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” use “software” that works “across multiple devices and platforms” via “dynamic ad insertion” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 73-76). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

545. Thus, Hite discloses “The system of claim 1” (as described above) wherein the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID

codes) is “stored in said at least one addressable and reserved storage space” (for example, by storing commercials in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) that “is located in a first end user receiver” (for example, a first control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site that receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), wherein “a second end user receiver is identified by a central control unit as being associated with the first end user receiver” (for example, Advertisement Administration Facility at a signal origination site receives the same viewer identification number from both of a first and a second such control devices), wherein “the central control unit communicates with the second end user receiver” (for example, the second control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site also receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), and wherein “the central control unit manages the delivery of the particular advertising

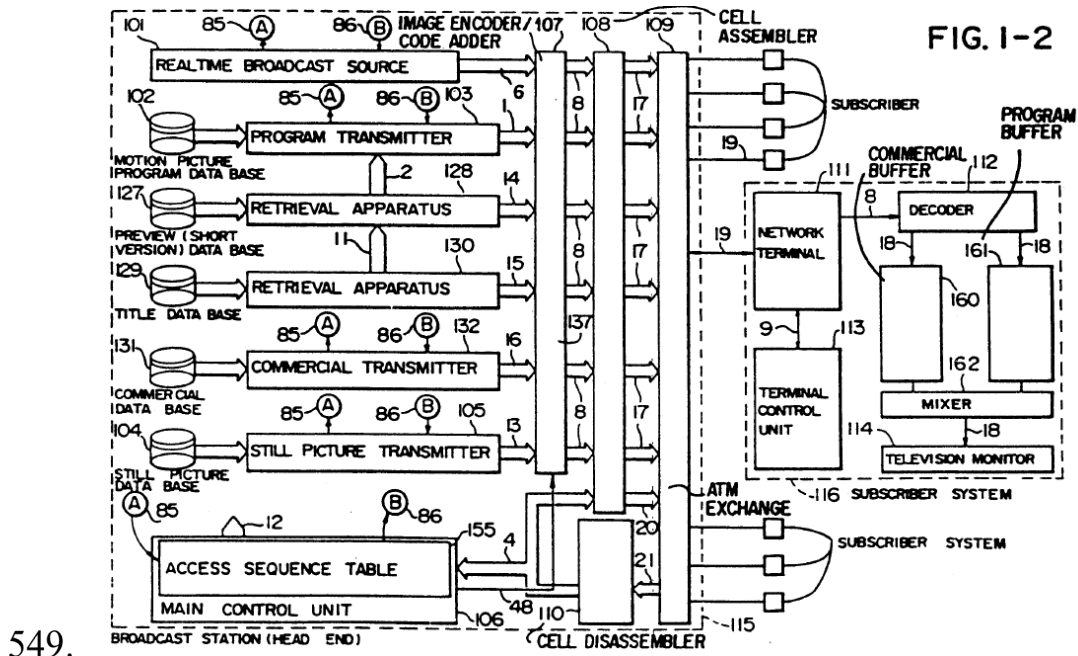
data to the second end user receiver” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes including viewer identification number to the second control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

546. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

547. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or in view of Baji also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

548. As discussed above in the discussion of the State of the Art, Baji discloses a system and components for processing “commercial insertion on the side of a subscriber system” in which “the system sends a video data commercial requested by the subscriber” (see, for example, Ex. 1025 at 8:30:45). Thus, Baji discloses a system for delivering targeted advertising to individual subscriber systems. Because the subscriber system of Baji includes separate storage spaces

for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising (see, for example, Ex. 1025 at 8:30-45; Figure 1-2, as reproduced below.



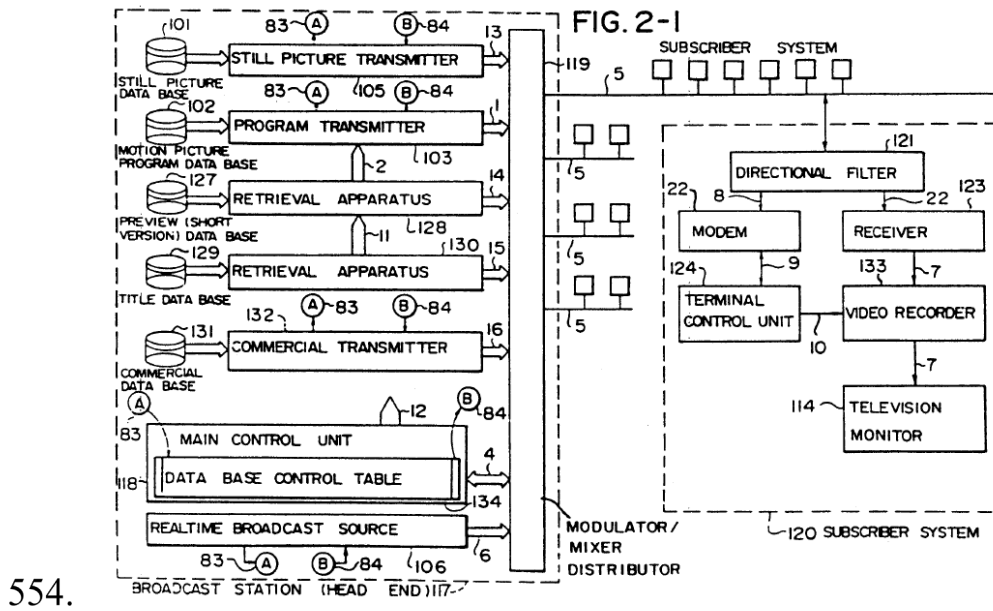
549. Baji discloses that “While displaying the video data from the program buffer 161 on the television monitor, the subscriber monitors the index added to the displayed frame” to determine when to insert a commercial, and that “the commercial and the program are displayed at the same time” as directed by the “content of the index” which may include the “coordinates on the monitor screen” where the commercial is to be inserted, and the “mixer 162 reads the content thereof so as to effect a proper operation to mix the images” (see, for example, Ex. 1025 at 9:3-16).

551. Baji generally discloses a broadcast system wherein a plurality of subscribers are all connected to the same broadcast station or head end 117. (see, for example, Ex. 1025 at FIG. 1-2, as reproduced above, FIG 2-1, as reproduced below). Thus, the head end 117 associates the plurality of subscribers with each other as being part of the same distribution network.

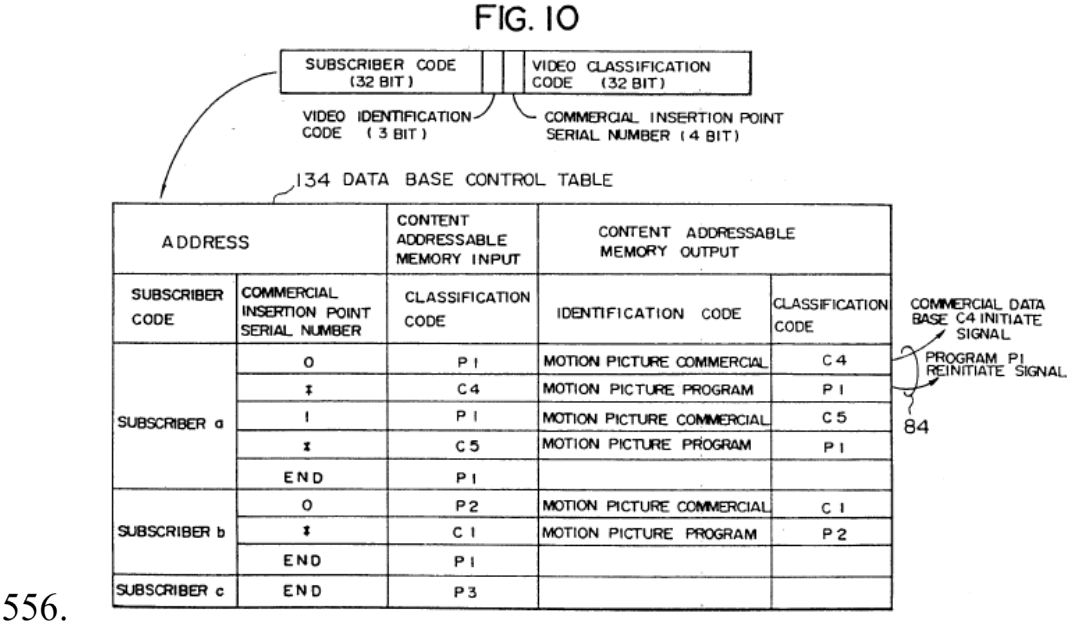
552. From the head end, “a program and a commercial selected by a [particular] subscriber ‘a’ are sequentially transmitted via the modulator/mixer distributor 119 to the subscriber” in parallel with a “control information ‘User a open’ to initiate the video recorder 133 of the subscriber terminal 120, thereby recording the programs and commercials” and when the program and commercial transmission is finished, “a stop signal ‘User a close’ is delivered to terminate the operation of the video recorder 133” (see, for example, Ex. 1025 at 13:43-55). At the display site, the “subscriber terminal 120 receives the control signals above by means of the modulator/demodulator or modem 122 and converts the information items into a terminal control signal 9” that instructs the “terminal control unit 124” to generate “a video recorder control signal 10” (see, for example, Ex. 1025 at 13:65-14:4; Fig. 2-1, as reproduced below). Similar to subscriber “a,” “there is achieved the similar operation so as to sequentially conduct the down load operation of the desired programs and commercials for the subscribers ‘b’, ‘c’, etc” (see, for example, Ex. 1025 at 13:55-59). Thus, Baji discloses that

modulator/mixer distributor 119 manages the transmission of programs and commercials to each of the plurality of customers based on their individual preferences.

553. Nothing in the claim suggests that the particular advertising data must be delivered to the second end user receiver by the first end user receiver. However, it would have been obvious in view of the teachings of Baji to do so. Baji teaches the use of multiple subscriber systems (such as those discussed above as “a,” “b,” and “c” above). These subscriber systems are all a part of the same broadcast system. Further, “a program and a commercial selected by a [particular] subscriber ‘a’ are sequentially transmitted via the modulator/mixer distributor 119 to the subscriber.” (see, for example, Ex. 1025 at 13:57-59, FIG 2-1, as reproduced below). Thus, each subscriber terminal is capable of receiving commercial and program content. Each subscriber terminal is also capable of “transfer[ring] a desired program and a desired commercial information item to the broadcast station or head end 117.” (see, for example, Ex. 1025 at 14:17-20, FIG 2-1, as reproduced below). Therefore, each subscriber terminal is also capable of using the included modem and directional filter to deliver items to other components of the broadcast system. It would have been obvious to use the broadcast system of Baji to deliver content between subscriber terminals in order to save the bandwidth and resources associated with the modulator/mixer distributor.



555. Baji discloses that the “main control unit 105 of the head end 117” includes a “data base control table 134,” shown for example in Fig. 10, in which “commercial insertion point” and “content addressable memory output” is controlled on a subscriber-by-subscriber basis, based on the subscriber’s associated “subscriber code” where the “content of the table 134 is updated or rewritten with up-link control information (see, for example, Ex. 1025 at 14:67-15:6; Fig. 10, reproduced below). Baji teaches that the head end communicates with each subscriber system via “up-link” and “down-link” control information (see, for example, Ex. 1025 at 14:5-29). Each subscriber system sends information about the content it wishes to view and the head end then sends control information to each subscriber system that allows each system to receive the appropriate content from the content database.



556.

557. Thus, Baji discloses “The system of claim 1” (as described above) wherein the “particular advertising data stored in said at least one addressable and reserved storage space is located in a first end user receiver” (for example, commercials are sent from a central head end broadcast station and stored in a commercial buffer at the subscriber system), wherein “a second end user receiver is identified by a central control unit as being associated with the first end user receiver” (for example, a plurality of subscriber systems are identified by the system with access sequence table at the central head end), wherein “the central control unit communicates with the second end user receiver” (for example, the access sequence table directs the delivery and insertion of particular commercials based on subscriber identification information, where video program and commercial signals are sent to at least one of a plurality of subscriber systems for

storage and subsequent play back) and “wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver” (for example, the head end sends control signals to the particular subscriber’s system that causes the subscriber’s systems to store the video program and commercial signal in a commercial buffer or a video recorder in the subscriber system for subsequent playback by the subscriber system).

558. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji’s use of a central database to manage content delivery based on subscriber identification to further address a need identified by Hite to accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers,” particularly where the advertising involved a larger target audience of viewers (see, for example, Ex. 1009 at 3:21-35; Ex. 1025 at 13:28-61). Furthermore, the combination yields the completely predictable and desirable result that using a central database of control codes associated with subscriber

specific identification codes to manage content delivery to multiple subscribers would keep a subscriber's viewing experience consistent across devices (see ¶¶ 213-217).

'494 Patent: Claim 17

17. The system of claim 16, wherein the particular advertising data is combined with digital media content to create combined digital media content and wherein the central control unit manages the delivery of the combined digital media content to the second end user receiver device.

17. The system of claim 16, wherein the particular advertising data is combined with digital media content to create combined digital media content and wherein the central control unit manages the delivery of the combined digital media content to the second end user receiver device.

559. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 16 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 537-547.

560. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

561. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element. As described in at least ¶¶ 463-475 above, Hite's disclosure of the "control device" such as a "television receiver,

VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer” at the “consumer display site” in Hite meets the limitation of the “end user receiver associated with the at least one end user” of this claim element, whether such “end user” is a “second end user” or otherwise.

562. As described in at least ¶¶ 515-527 above, Hite’s disclosure of the “commercial processor in combination with receiver, frequency selector and detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site” in Hite meets the limitation of the “the particular advertising data is combined with digital media content to create combined digital media content” of this claim element, whether such “combined digital media content” is destined for a “second end user” or otherwise.

563. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that communicates with “end user receivers,” whether “first” or “second” (for example, the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video

provider, or personal computer at the consumer display site receives signals from the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility), and “manages delivery of the particular advertising data to said end user receivers,” whether “first” or “second” or otherwise (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

564. However, this Claim 17 of the ‘494 recites that this “central control unit manages the delivery of the combined digital media content to the second end user receiver device,” not just “manages delivery of the particular advertising data to said end user receivers,” whether “first” or “second” or otherwise. In my opinion, Hite also discloses this limitation of “manages the delivery of the combined digital media content,” whether to an “end user” that is a “second end user” or otherwise, via either of the following two alternatives described in Hite.

565. In the first alternative, Hite discloses that the “Media Origination Facility” not only facilitates the delivery of targeted commercials and appropriate CID codes as described previously, but “also receives programming and commercials from other sources and creates some programming and commercials in its own facilities” (see, for example, Ex. 1009 at 9:28-31). Hite further discloses that “The package of programming and processed commercials and CID codes is conveyed to the display site 400 (reception site)” from this “Media Origination Facility” via “electrical and/or optical links **303**, or radio transmission via antenna **302** and **401**, or via satellite **202** and antennas **301** and **402**, or even via physical means **307** such as optical or magnetic tapes or disks or other suitable means” (emphasis added, see, for example, Ex. 1009 at 9:32-37). Since the elements of the “combined digital media content” in Hite are the “programming,” the “processed commercials,” and the “CID codes,” then the “Advertisement Administration Facility” including its databases in combination with the “Advertisement Transmission Facility” and the “Media Origination Facility” (or “central control unit” of this Claim 17) is clearly disclosed in this first alternative of Hite to be “managing delivery” of all three elements and hence the “combined digital media content” as such elements will be predictably combined, as described previously herein, in each “control device” at the “display site” (or “end user receiver” of this Claim 17).

566. In the second alternative, Hite discloses “a fourth preferred embodiment of the system and process in accordance with the invention” that Hite notes “can be combined with any of the previous embodiments,” wherein “the channels with preemptable and conditionally preemptable commercials are synchronized at the signal origination source so that enhanced advertising can be inserted independent of which program is be watched” (emphasis added, see, for example, Ex. 1009 at 7:64-8:2, 8:16-17). Hite continues the description of this embodiment with “Not only is the commercial selected to fit the needs and wants of the viewer, but these more interesting commercials can be made to appear on a variety of programs” such that “The consumer becomes more reachable even in an environment consisting of hundreds of channels” and “[i]f the viewer changes channels to another channel with a preemptable commercial, the commercial is uninterrupted even though the channel indicator changes and indicates the new channel” (emphasis added, see, for example, Ex. 1009 at 8:3-11).

567. Also with respect to this second alternative, Hite describes “programming” that “is received” at the “Media Origination Facility” via “satellite, fiber, coaxial cable, twisted pairs, and other means and is represented by the Other Programming block 360” wherein the “Program CID Code Distributor **368** conveys CID codes by electrical and/or optical connection **370** for combination with the programming signals” and “Other Programming 360 signals

are conveyed by electrical and/or optical connections **362** to Synchronizers **364**”

(emphasis added, see, for example, Ex. 1009 at 13:32-39, FIG. 3 as reproduced

below). Hite further describes that “Programming with preemptable commercials

is synchronized in the Synchronizer block **364**” such that “synchronized signals

with preemptable programming and the other signals which have not been

synchronized is conveyed by electrical and/or optical connection **366** to the Signal

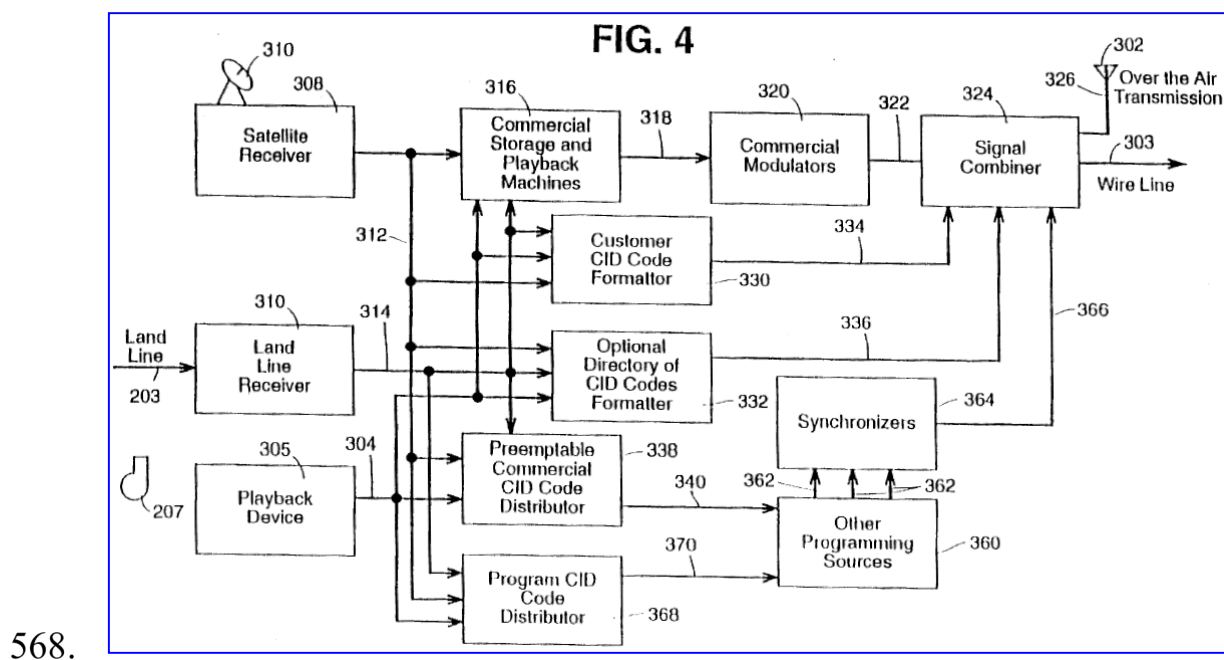
Combiner **324**” which “conveys the signals by electrical and/or optical connection

326 to an antenna for over the air transmission and or conveys the signals by

electrical and/or optical wire line connection **303** to a plurality of Display Sites

400” (emphasis added, see, for example, Ex. 1009 at 13:19-25, 13:39-46, FIG. 4 as

reproduced below).



569. Thus in Hite's second alternative disclosure, the "Advertisement Administration Facility" including its databases in combination with the "Advertisement Transmission Facility" and the "Media Origination Facility" (or "central control unit" of this Claim 17) is clearly disclosed as the entity that "combines" the "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" (or "particular advertising data" of this Claim 17) with the "programming" or "channels" (or "digital media content" of this Claim 17) in order to create "synchronized programming with targeted commercials" (or "combined digital media content" of this Claim 17), and is clearly disclosed as the entity that manages the delivery of such "synchronized programming with targeted commercials" to a plurality of "end user receiver devices," whether "second" or otherwise.

570. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" use "software" that performs "smart sequencing" for "dynamic insertion" of "ads" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 76-77). In my

opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

571. Thus, Hite discloses "The system of claim 16" (as described above) wherein the "particular advertising data" (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is "combined with digital media content to create combined digital media content" (for example, commercial processor in combination with receiver, frequency selector and detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site) and wherein "the central control unit manages the delivery of the combined digital media content" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility controls the delivery of both of programming or channels and of video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes), to "the second end user receiver device" (for example, a second control device such as a television receiver, VCR, display

device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site).

572. Alternatively, Hite discloses “The system of claim 16” (as described above) wherein the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “combined with digital media content to create combined digital media content” (for example, a synchronizer and signal combiner within the Media Origination Facility combines a digital data stream for a program with one or more targeted commercials at a commercial break in the program to enable a combined digital program/targeted commercial playback to the consumer at the display site) and wherein “the central control unit manages the delivery of the combined digital media content” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility controls the delivery of both of programming or channels and of video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes), to “the second end user receiver device” (for example, a second control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site).

573. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

574. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 18

18. The system of claim 16, wherein the second end user receiver is a portable digital recorder/player, and wherein said system maintains at least one record from a group consisting of: identification of the second end user receiver, identification of the portable digital recorder/player, identification of the delivery of the particular advertising data to the second end user receiver, identification of the particular advertising data, account information for the at least one end user, an access by the at least one end user of the particular advertising data, and combination thereof.

18. The system of claim 16, wherein the second end user receiver is a portable digital recorder/player, and wherein said system maintains at least one record from a group consisting of: identification of the second end user receiver, identification of the portable digital recorder/player, identification of the delivery of the particular advertising data to the second end user receiver, identification of the particular advertising data, account information for the at least one end user, an access by the at least one end user of the particular advertising data, and combination thereof.

575. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 16 of this claim element under either the broadest reasonable interpretation or the

various alternative interpretations described above for at least the reasons summarized in ¶¶ 559 - 574.

576. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

577. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element, as well as "CID codes" that disclose "records" such as "identification of the particular advertising data" or "an access by the at least one end user of the particular advertising data". As described in at least ¶¶ 463-475 above, Hite's disclosure of the "control device" such as a "television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer" at the "consumer display site" in Hite meets the limitation of the "end user receiver" of this claim element, whether such "end user" is a "second end user" or otherwise.

578. More specifically with respect to the "portable digital recorder/player" limitation of this Claim 18, Hite discloses that the "storage devices used to implement this invention can be of any form which is economical at the time of construction" wherein "Examples include magnetic, optical, and semiconductor

implemented in tapes, disks, and chips as well as combinations of these technologies” (emphasis added, see, for example, Ex. 1009 at 12:6-11).

579. Hite also discloses that at the “display site” the “The Commercial Processor **438** can cause *commercial signals* to be *stored or played back* from the Optional *Video Storage Device 456*” wherein such a “digital recording device” is “installed at the display site in the *television receiver, VCR, display device set-top-box or modular decoder associated with the video provider* (cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 6:62-66, 14:28-30). At the alleged time of the invention of the ‘494 Patent, such enumerated devices above, particularly when connected via “DBS” service (a wireless satellite communications transmission service across the entire continental USA), were known to “record” or “play” multimedia content from “storage media” such as the “tapes, disks, and chips” described in Hite wherein such devices were “portable”.

580. Hite further discloses “the *invention* involves supplementary *electronics built into* set-top boxes, consumer electronics products, *personal computers*, plug-in modules for the Decoder Interface of “cable ready” products, and *other display devices*” wherein such “*electronics* has the purpose of *managing the display of special advertisements* based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65). At the alleged time of the invention of the ‘494 Patent, “*personal computers*” were known to

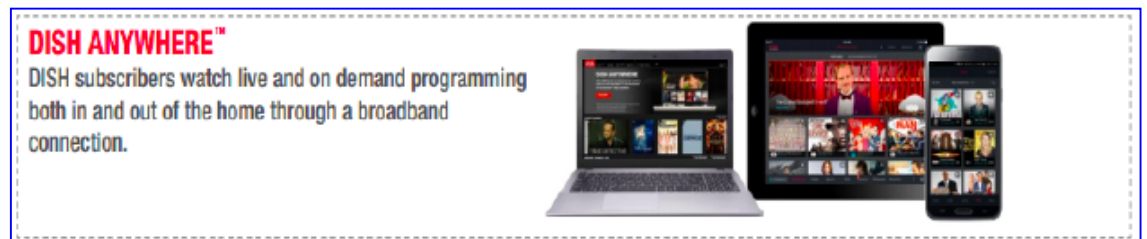
“record” or “play” multimedia content from “storage media” such as the “tapes, disks, and chips” described in Hite wherein such “personal computers” were “portable”.

581. Hite also discloses a “registration code” wherein whenever a “commercial is successfully displayed, the registration code is communicated back upstream to the signal origination site” possibly with a “time and date stamp” added and can comprise “a viewer identification number” that “is included in the acknowledgment messages centrally collected” (emphasis added, see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully displayed, but it has also been viewed, recognized, and acted upon” (emphasis added, see, for example, Ex. 1009 at 5:11-16).

582. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be

relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges Petitioner's "DISH Anywhere" capability that enables a subscriber to "transfer your recordings so you can watch them offline" on a variety of devices including a personal computer as well as the collection of "personal information" such as "viewing habits" or "persistent identifiers" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 77-80, including the excepted figure shown herein). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

583.



584. Thus, Hite discloses "The system of claim 16" (as described above) wherein "the second end user receiver" (for example, a second control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site) is a "portable digital recorder/player" (for example, any DBS enabled control device or the personal computer would be considered portable, any control device with tape, disk or chip storage such as at least the VCR and the personal computer would be considered a recorder/player), and wherein "said system maintains at

least one record from a group consisting of: identification of the second end user receiver, identification of the portable digital recorder/player, identification of the delivery of the particular advertising data to the second end user receiver, identification of the particular advertising data, account information for the at least one end user, an access by the at least one end user of the particular advertising data, and combination thereof” (for example, more than one of the listed records is disclosed such as “identification of the delivery of the particular advertising data to the second end user receiver” via registration or certification codes, “identification of the particular advertising data” via CID codes, one or more of “identification of the second end user receiver,” “identification of the portable digital recorder/player,” “account information for the at least one end user,” or “an access by the at least one end user of the particular advertising data” via viewer identification number).

585. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

586. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 19

19. A device for providing targeted advertising to an end user, comprising:

- at least one input port for receiving digital multimedia data, wherein the digital multimedia data comprises particular advertising data for targeting to at least one end user based upon predefined criteria data associated with the at least one end user;

- at least one storage device;

- at least one addressable and reserved storage space for storing the particular advertising data;

- at least one processor configured to reserve said at least one addressable storage space and to present the particular advertising data to the at least one end user.

19(a). A device for providing targeted advertising to an end user, comprising:

587. In my opinion, this preamble claim element is a claim limitation.

588. As described in at least ¶¶ 397-403 above with respect to the preamble of Claim 1 of the ‘494 Patent and in at least ¶¶ 464-475 above with respect to the “end user receiver” of Claim 2 of the ‘494 Patent, Hite discloses the limitation of “A device for providing targeted advertising to an end user”.

589. Also, exemplary claim 63 within Hite recites “A system for targeting advertisements for display at a consumer display site” and “a control device at the consumer display site” (emphasis added, see, for example, Ex. 1009 at 20:6-8).

590. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “satellite television service” is a “system” that “enables the delivery of

addressable advertising data to specific Dish Network customers” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 80-83). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

591. Thus, Hite discloses a “device for providing targeted advertising” (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site that is for displaying targeting advertisements) to an “end user” (the consumer or viewer at the display site that views the video/audio combined commercials).

592. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

593. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

19(b): at least one input port for receiving digital multimedia data, wherein the digital multimedia data comprises particular advertising data for targeting to at least one end user based upon predefined criteria data associated with the at least one end user;

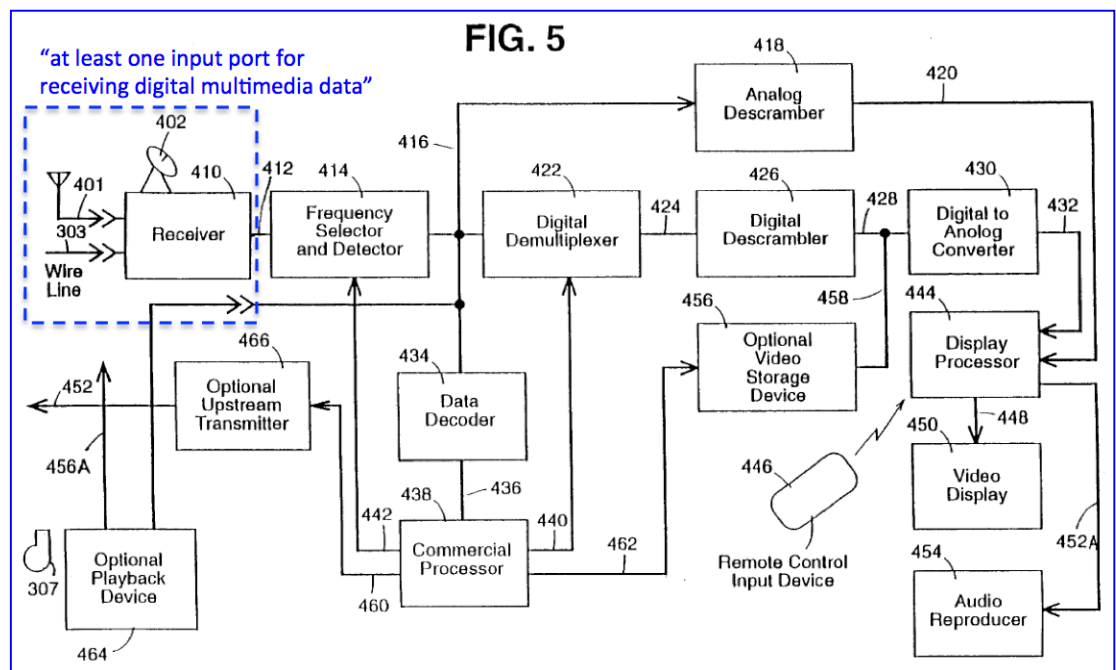
594. See ¶¶ 152 and 153 above regarding claim construction under the broadest reasonable interpretation for this claim element.

595. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to customer demographics or cost effectiveness" in Hite meets the antecedent limitation of the "particular advertising data for targeting to at least one end user based upon predefined criteria data associated with the at least one end user" of this claim element.

596. Hite discloses that "The package of programming and processed commercials and CID codes is conveyed to the display site **400** (reception site)" from this "Media Origination Facility" via "electrical and/or optical links **303**, or radio transmission via antenna **302** and **401**, or via satellite **202** and antennas **301** and **402**, or even via physical means **307** such as optical or magnetic tapes or disks or other suitable means" (emphasis added, see, for example, Ex. 1009 at 9:32-37).

597. Hite further discloses at the "Display Site **400**," "Signals are conveyed by electrical and/or optical connection **303** and/or by radio via antenna **401** and/or via satellite via satellite antenna **402** to a receiver **410**" or "Optionally, physical media **307** could be used within Optional Playback Device **464** which connects via a radio frequency connection **456A**, typically at television channel 3 or 4 to the antenna terminals **404** or cable input **406** of receiver **410**" (emphasis added, see, for example, Ex. 1009 at 13:59-66).

598. More specifically, Hite describes FIG. 5 wherein “receiver 410 preprocesses the signal and conveys it by electrical and/or optical connection 412 to a Frequency Selector and Detector 414 which then conveys the selected and demodulated baseband signals by electrical and/or optical connection 416 to a Data Decoder 434 which extracts data required by this invention” (emphasis added, see, for example, Ex. 1009 at 13:66-14:4, and FIG. 5 as annotated herein).



599.

600. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 589 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” (emphasis added, see, for example, Ex. 1009 at 20:8-10).

601. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR Devices" include a "Satellite Coax" port and have "software" that supports "targeted advertising according to specific household viewer geographic and demographic and other pre-determined viewer metrics" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 83-87). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

602. Thus, Hite discloses a "at least one input port for receiving digital multimedia data" (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site has a receiver that receives a package of programming and processed commercials and CID codes at a satellite antenna input port, an electrical or optical input port, a terrestrial broadcast input port and/or a physical storage medium input port) wherein "the digital multimedia data comprises particular advertising data for targeting to at least one end user based upon predefined criteria data associated with the at least one end user" (for example, the package of programming and processed commercials and

CID codes comprises commercials that are targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to customer demographics or cost effectiveness).

603. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

604. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

19(c): at least one storage device;

605. See ¶ 151 regarding claim construction under the broadest reasonable interpretation for this claim element.

606. As discussed above at element 1[b], Hite discloses “at least one storage device.” Hite discloses that the “storage devices used to implement this invention can be of any form which is economical at the time of construction” wherein “Examples include magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (emphasis added, see, for example, Ex. 1009 at 12:6-11). Hite also describes the “display site” as having a “digital recording device” within a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider”

(cable, DBS, telephone, etc.)” (emphasis added, see, for example, Ex. 1009 at 6:62-66).

607. Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder Interface of "cable ready" products, and other display devices” wherein such “electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer” (emphasis added, see, for example, Ex. 1009 at 14:59-65). At the alleged time of the invention of the ‘494 Patent, “personal computers” were known to “record” or “play” multimedia content to or from “storage devices” such as the “tapes, disks, and chips” comprised within or connected thereto such “personal computers”.

608. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 589 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” (emphasis added, see, for example, Ex. 1009 at 20:8-13).

609. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity

analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR Devices" include a "hard drive" and "memory" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at p. 87). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

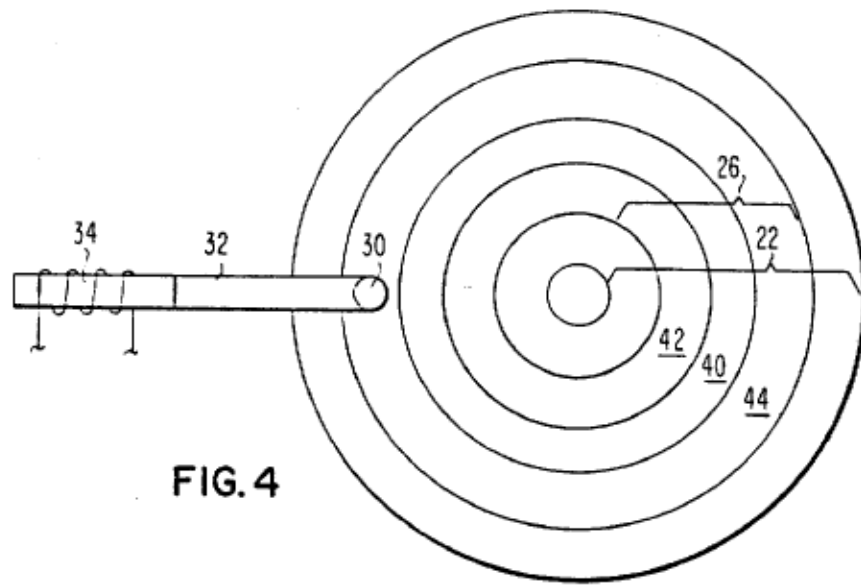
610. Thus, Hite discloses "at least one storage device" (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site has at least one storage device such as tapes, disks, and chips).

611. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

612. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

613. However, Hill also discloses a "data storage device" that is "partitioned" into separate storage spaces "having different access and storage characteristics" and "automatic placement of data on the partitioned device" based

on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



614.

615. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

616. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

617. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

618.

619. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified

advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

19(d): at least one addressable and reserved storage space for storing the particular advertising data;

620. See ¶¶ 151 and 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

621. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored in Hite meets the limitation of the “at least one addressable and reserved storage space” of this claim element. As described in at least ¶¶ 439-452 above, Hite’s disclosure of “commercials that are targeted for consumption by a specific display site or consumer according to CID codes” in Hite meets the limitation of the “particular advertising data” of this claim element.

622. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 589 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for

storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

623. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices come with memory, such as a hard drive, RAM, and Flash Memory” and further that such “memory” or “storage device” hold “targeted ads” (as well as everything else in the DVR system) and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 87-88). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

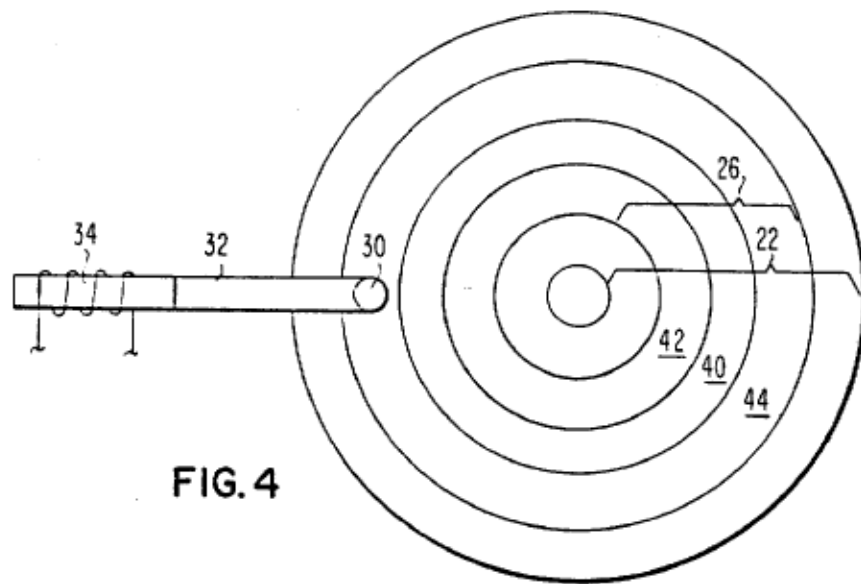
624. Thus, Hite discloses “at least one addressable and reserved storage space for storing the particular advertising data” (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site has at least one individually addressable digital recording device (RD) with a unique address or Video Storage Device to store commercials that are targeted for consumption by a specific display site or consumer according to CID codes).

625. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

626. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

627. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper

and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



628.

629. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42,

44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

630. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

631. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

632.

633. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

634. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based

on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would have looked to Hill's high access partition to further address a need identified by Hite to increase storage efficiency and accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers." (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite's "commercial storage and playback device" and/or the "optional video storage device." (see ¶¶ 202-205 above).

635. Baji also discloses a system and components for processing "commercial insertion on the side of a subscriber system" in which "the system sends a video data commercial requested by the subscriber" as provided by "access sequence table 155 disposed in a main control unit 106" where the "commercial insertion mode is defined in conformity with Table 1" (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below).

TABLE 1

<u>Advertisement insertion modes</u>				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

636.

637. Baji discloses that, in the “subscriber system” at the display site, there is “a commercial buffer 160 [to] temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below). Because the subscriber system of Baji includes separate storage spaces for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising.

638. Thus, Baji discloses “at least one addressable and reserved storage space for storing the particular advertising data” (commercial buffer that stores commercials for insertion into program content).

639. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji’s use of commercial buffer storage to eliminate the need for simultaneous distribution of commercial and program content to further address a need identified by Hite to accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers” (see, for example, Ex. 1009 at 8:9-29; Ex. 1025 at 8:9-48). Furthermore, the combination yields the completely predictable and desirable result that separating commercial and program content would avoid unnecessary complication of the transmission of content to individual end users. (see ¶¶ 213-217).

19(e): at least one processor configured to reserve said at least one addressable storage space and to present the particular advertising data to the at least one end user.

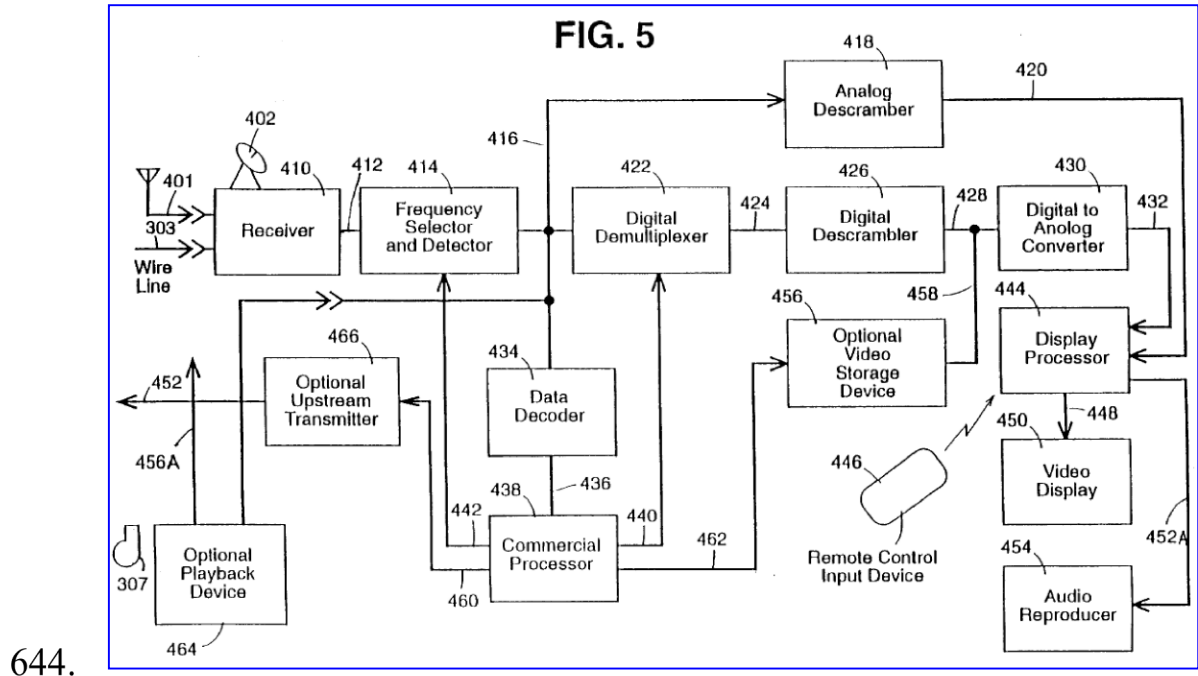
640. See ¶¶ 151 and 152 regarding claim construction under the broadest reasonable interpretation for this claim element.

641. As described in at least ¶¶ 405-417 above, Hite's disclosure of the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the "said at least one addressable and reserved storage space" of this claim element. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element.

642. Also, as described in at least ¶¶ 439-452 above, Hite's disclosure of a "commercial processor at the control device in the display site that compares stored CID codes with CID codes appended to processed commercials" in Hite meets the limitation of the "at least one processor configured to reserve said at least one addressable and reserved storage space" of this claim element.

643. Hite describes that "Commercial Processor 438 can select the frequencies received by the system by signals conveyed by electrical and/or optical connection 442 to Frequency Selector and Detector 414" and "can select the data stream processed by the digital portions of the system by the system by signals conveyed by electrical and/or optical connection 440 to the Digital Demultiplexer

422” (emphasis added, see, for example, Ex. 1009 at 14:14-20). Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30).



Continuing in reference to FIG. 5 as reproduced above, Hite describes “Digital signals which the customer is authorized to receive are descrambled and conveyed by electrical and/or optical connection **428** to a Digital to Analog Converter **430** which converts these signals into a form suitable for further processing and display” and “playback” of “certain commercials” stored in “Video Storage Device **456**” under the “control of signals conveyed by electrical and/or optical connection **462** from the Commercial Processor **438**,” thereby merging at “connection **428**” under processor control the digital media streams with the

targeted commercials at appropriate commercial breaks (emphasis added, see, for example, Ex. 1009 at 14:33-46). Hite also describes that “signals from the Digital to Analog Converter **430**” are “conveyed by electrical and/or optical connection **432**” to a “Display Processor **444**” and then “by electrical and/or optical connection **448** to the video display **450**” and “by electrical and/or optical connection **452A** to the Audio Reproducer **454**” (emphasis added, see, for example, Ex. 1009 at 14:47-58).

646. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 589 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement and a code stored in the control device and for displaying an advertisement in a break in the program when the codes match” (emphasis added, see, for example, Ex. 1009 at 20:8-20).

647. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” have “software” alleged for “custom targeted

advertising delivery to digital households” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 88-89). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

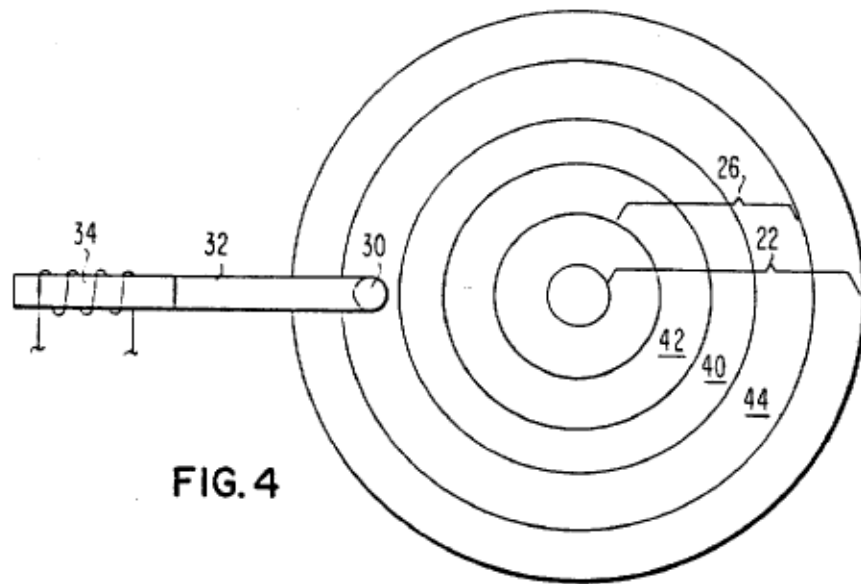
648. Thus, Hite discloses “at least one processor” (for example, commercial processor within a device at the consumer display site such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer executes an algorithm) that is “configured to reserve said at least one addressable storage space” (for example, the algorithm executes on the commercial processor to selectively store targeted commercials to the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and that is “[configured] to present the particular advertising data to the at least one end user” (for example, the commercial processor selects commercials that are targeted for consumption by a specific display site or consumer according to CID codes and the control device at the display site displays the ad to the consumer end user or viewer).

649. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

650. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

651. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on

actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



652.

653. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a

unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

654. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

655. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING

656.

657. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

‘494 Patent: Claim 23

23. The device of claim 19, wherein a central control unit located remote from said device is configured to perform a function selected from the group consisting of managing delivery of the data to the receiver, directing storage in the reserved storage space, dynamically merging with content, controlling sending an advertisement to a portable device, and combinations thereof, and wherein the central control unit

processes profile data associated with the at least one end user to generate the suitability criteria data.

23. The device of claim 19, wherein a central control unit located remote from said device is configured to perform a function selected from the group consisting of managing delivery of the data to the receiver, directing storage in the reserved storage space, dynamically merging with content, controlling sending an advertisement to a portable device, and combinations thereof, and wherein the central control unit processes profile data associated with the at least one end user to generate the suitability criteria data.

658. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

659. See ¶¶ 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

660. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites).

661. As described in at least ¶¶ 560-573 above, Hite discloses that this “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with

the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) is configured to perform the function of “managing delivery” of “digital multimedia data” (for example, programming or channels and video/audio combined commercials) to an “end user receiver” (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

662. As described in at least ¶¶ 560-573 above, Hite discloses that this “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) is configured to perform the function of “directing storage in the reserved storage space” (for example, via the CID codes sent to a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

663. As described in at least ¶¶ 560-573 above, Hite discloses that this “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which

is distinct from the control device at each of the plurality of Display Sites) is configured to perform the function of “dynamically merging with content” (for example, a synchronizer and signal combiner within the Media Origination Facility combines a digital data stream for a program with one or more targeted commercials at a commercial break in the program to enable a combined digital program/targeted commercial playback to the consumer at the display site).

664. As described in at least ¶¶ 576-585 above, Hite discloses that this “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) is configured to perform the function of “controlling sending an advertisement to a portable device” (for example, sending CID codes and commercials with appended CID codes to a control device that is portable such as a personal computer).

665. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) that “processes profile data associated with” at least one “end user” to generate “suitability criteria data” (for example, the Advertisement

Administration Facility processes CID codes such as viewer reaction codes to generate certain CID codes directed to customer demographics or cost effectiveness).

666. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "system infrastructure" communicate with "DVR devices" that have "software" alleged to "end user profile data, including user age, gender, viewer program ratings information, income and geography" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 89-90). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

667. Thus, Hite discloses "The device of claim 19" (as described above) wherein "a central control unit located remote from said device" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) is "configured to perform a function selected from the group consisting of managing delivery of the data to the receiver, directing storage in the reserved storage space,

dynamically merging with content, controlling sending an advertisement to a portable device, and combinations thereof” (for example, for each respective enumerated “function” see the disclosure in Hite as summarized in each of ¶¶ 661-664 above), and wherein “the central control unit processes profile data associated with the at least one end user to generate the suitability criteria data” (for example, the Advertisement Administration Facility processes CID codes such as viewer reaction codes to generate certain CID codes directed to customer demographics or cost effectiveness).

668. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

669. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 24

24. The device of claim 23, wherein the central control unit comprises a software program to select, based upon the program selectable criteria data associated with the at least one end user, the particular advertising data from the program selectable advertising data.

24. The device of claim 23, wherein the central control unit comprises a software program to select, based upon the program selectable criteria data associated with the at least one end user, the particular advertising data from the program selectable advertising data.

670. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 23 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

671. See ¶¶ 152 and 155 regarding claim construction under the broadest reasonable interpretation for this claim element.

672. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element.

673. As described in at least ¶¶ 483-493 above, Hite discloses a "central control unit" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility).

674. As described in at least ¶¶ 483-493 above, Hite discloses that this "central control unit" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) can "select" based upon "criteria data" (for example, certain CID codes directed to customer demographics or cost

effectiveness) the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) as opposed to other “advertising data” (for example, that includes commercials not targeted for consumption by a specific display site or consumer).

675. Hite discloses “At the point of usage, a Commercial Processor (CP) is programmed to find and analyze the CID codes in each commercial” such that “[w]hen a match between the CID in the commercial and the CID transmitted and stored at the point of use is found, the advertisement is then presented to the viewer” (emphasis added, see, for example, Ex. 1009 at 4:3-8). Additionally, Hite discloses an “algorithm” that is “created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer,” and wherein such an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:24-33).

676. Thus, Hite’s disclosure of an “algorithm” and “microcomputer program” that executes on a “processor” is a disclosure of “software” under the broadest reasonable interpretation of this claim.

677. More specifically, Hite shows as one exemplary “point of usage” that the “Advertisement Administration Facility” can comprise a “commercial processor” wherein “Commercials are received on a suitable media such as optical or magnetic tape or disks or via satellite and then locally recorded” and then “reproduced via a playback device **102** which conveys the signals via electrical and/or optical connection **104** to a commercial processor 106” so that “commercial processor 106 prepares the commercial for use in the system and process of this invention” such as appending “the appropriate CID code” (emphasis added, see, for example, Ex. 1009 at 9:58-66).

678. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “system infrastructure” communicate with “DVR devices” that have “software” alleged to monitor “end user profile data, including user age, gender, viewer program ratings information, income and geography” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 90-91). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

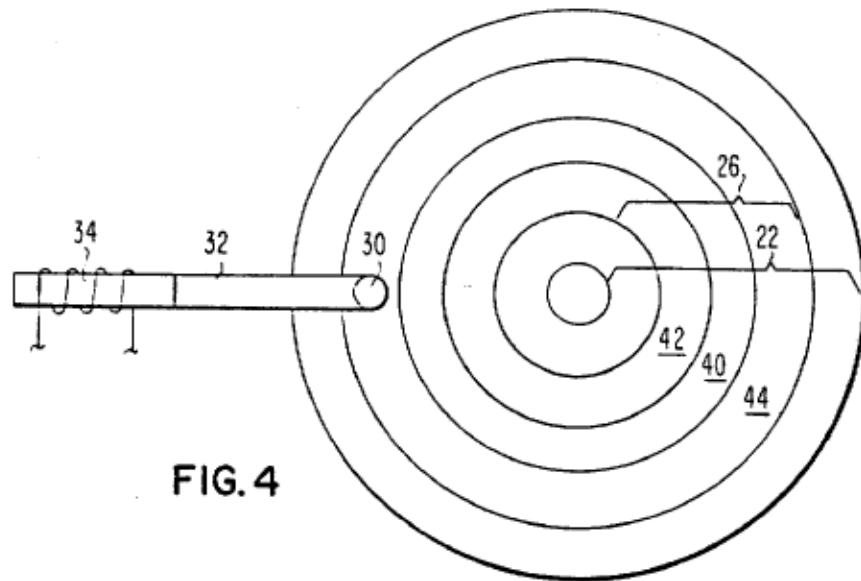
679. Thus, Hite discloses “The device of claim 23” (as described above) wherein “the central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) comprises “a software program” (for example, Advertisement Administration Facility comprises a commercial processor that executes an algorithm that is a conventional microcomputer program) to select “the particular advertising data from the program selectable advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes instead of commercials not targeted for consumption by a specific display site or consumer) based upon “the program selectable criteria data associated with the at least one end user” (for example, the Advertisement Administration Facility processes CID codes such as viewer reaction codes to generate certain CID codes directed to customer demographics or cost effectiveness).

680. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

681. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

682. Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel

distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



683.

684. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

685. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is

handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

686. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

687.

688. Hill discloses “a controller 10 and a plurality of storage devices 20, 25, 27, 29, 31” and that “two partitions” may be “defined to the system processor as two unique devices, each having a unique identifier” (see, for example, Ex. 1010 at 3:44-45, 7:9-11).

689. The “‘storage characteristics’ of data” in Hill are “determined by applications which access the data”

‘494 Patent: Claim 25

25. The device of claim 19, wherein the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, and combinations thereof.

25. The device of claim 19, wherein the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, and combinations thereof.

690. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

691. See ¶ 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

692. See ¶¶ 506-509 above, which shows that Hite discloses in reference to Claim 5 of the '494 Patent several of the same limitations as the limitations recited in this Claim 25 of the '494 Patent.

693. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" have "software" alleged to monitor "end user profile data, including user age, gender, viewer program ratings information, income and geography" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 91-92). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

694. Thus, Hite discloses "The system of claim 19" (as described above) wherein the "suitability criteria data" (for example, certain CID codes directed to customer demographics or cost effectiveness) is "collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring

playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, and combinations thereof” (for example, a viewer reaction code response identifies a specific “key word” or phrase such as children’s aspirin, a viewer reaction code response identifies a specific “activity”).

695. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

696. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 26

26. The device of claim 19, wherein the particular advertising data is stored in said addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content that is pre-stored in said at least one storage device for presenting the particular advertising to the at least one end user during playback of the digital media content.

26. The device of claim 19, wherein the particular advertising data is stored in said addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content that is pre-stored in said at least one storage device for presenting the particular advertising to the at least one end user during playback of the digital media content.

697. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA and/or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

698. See ¶152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

699. See ¶¶ 516-524 above, which shows that Hite discloses in reference to Claim 6 of the ‘494 Patent substantially similar limitations to the limitations recited in this Claim 26 of the ‘494 Patent. Moreover, Hite specifically discloses, “particular advertising data” that is “pre-stored in said at least one storage device” (prior to the “dynamic merging” with “digital media content” at least because “commercials that are targeted for consumption by a specific display site or consumer according to CID codes” are stored in the “the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes” (see, for example, ¶¶ 439-452 above).

700. See also ¶¶ 561-569 above.

701. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity

analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" use "software" that performs "smart sequencing" for "dynamic insertion" of "ads" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 91-92). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

702. Thus, Hite discloses "The system of claim 19" (as described above) wherein the "particular advertising data" (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is "stored in said addressable and reserved storage space" (for example, by storing commercials in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and wherein "said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content that is pre-stored in said at least one storage device for presenting the particular advertising to the at least one end user during playback of the digital media content" (for example, commercial processor in combination with receiver, frequency selector and detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections

combine a digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site).

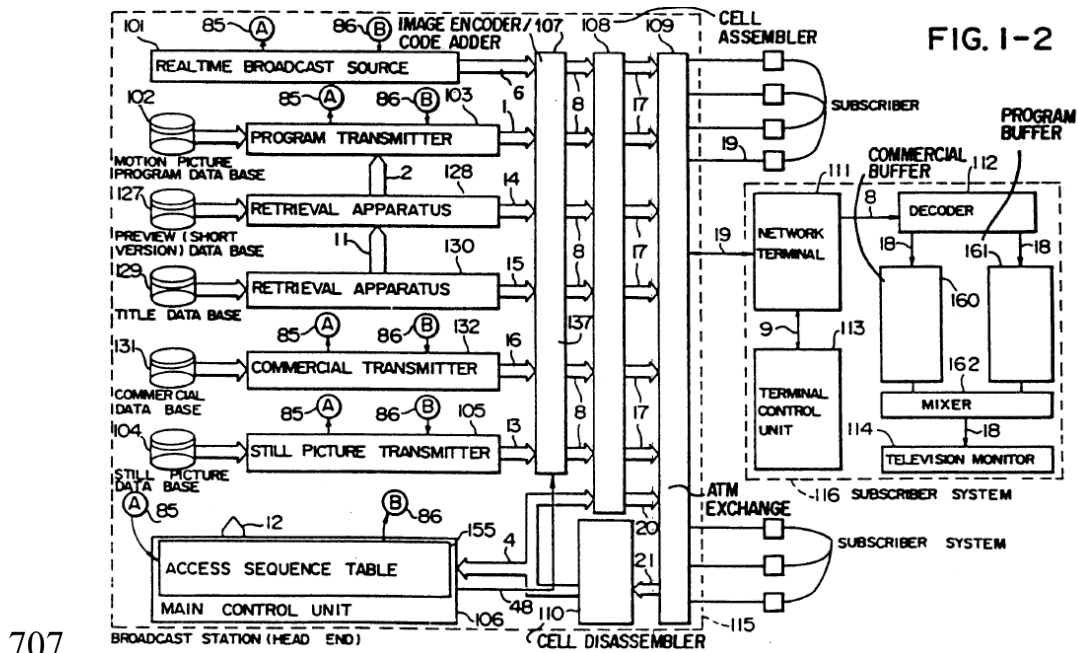
703. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

704. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill and/or in view of Baji also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

705. Baji also discloses a system and components for processing “commercial insertion on the side of a subscriber system” in which “the system sends a video data commercial requested by the subscriber” as provided by “access sequence table 155 disposed in a main control unit 106” where the “commercial insertion mode is defined in conformity with Table 1” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below).

TABLE 1				
Advertisement insertion modes				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

706. Baji discloses that, in the “subscriber system” at the display site, there is “a commercial buffer 160 [to] temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below). Because the subscriber system of Baji includes separate storage spaces for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising.



708. Baji discloses that “While displaying the video data from the program buffer 161 on the television monitor, the subscriber monitors the index added to the displayed frame” to determine when to insert a commercial, and that “the commercial and the program are displayed at the same time” as directed by the “content of the index” which may include the “coordinates on the monitor screen” where the commercial is to be inserted, and the “mixer 162 reads the content thereof so as to effect a proper operation to mix the images” (see, for example, Ex. 1025 at 9:3-16). Mixer 162, which is capable of reading video data from the commercial buffer and program buffer is a type of processing circuitry. Further, Baji explicitly recites that the program content is pre-stored in the program buffer for a specified delay or “wait” time. This period of pre-storage allows the mixer time to process and combine the program content with the commercial content.

The mixer takes portions of video content from both storage locations and merges them into a seamless video stream that may be transmitted to the television monitor for viewing by an end user.

709. Thus, Baji discloses “The system of claim 19” (as described above) wherein the “particular advertising data is stored in said addressable and reserved storage space” (for example, commercials stored in the commercial buffer at the subscriber system) and wherein “said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content that is pre-stored in said at least one storage device for presenting the particular advertising to the at least one end user during playback of the digital media content” (for example, program content is stored in a program buffer for subsequent playback after a delay and commercial content is stored at a commercial buffer for insertion according to instructions from advertisement insertion mode table and access sequence table, and that the mixer at the subscriber system is configured to mix the content of the separate commercial buffer and program buffer and pass a composite or mixed signal to a television monitor, and cause content from both buffers to be displayed at the same time).

710. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references

are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji's use of mixing or merging advertising content and program content from local storage to insert advertising into program content to avoid delays associated with downloading the content to further address a need identified by Hite to accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers" (see, for example, Ex. 1009 at 3:21-35; Ex. 1025 at 8:9-48). Furthermore, the combination yields the completely predictable and desirable result that mixing locally stored content at each subscriber's system before display would avoid delays caused by downloading the content. (see ¶¶ 213-217).

'494 Patent: Claim 27

27. The device of claim 19, wherein the particular advertising data is stored in said addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time.

27. The device of claim 19, wherein the particular advertising data is stored in said addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time.

711. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

712. See ¶¶ 151 and 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

713. See ¶¶ 531-532 above, which shows that Hite discloses in reference to Claim 7 of the ‘494 Patent substantially similar limitations to the limitations recited in this Claim 27 of the ‘494 Patent. Moreover, Hite specifically discloses, as shown in ¶ 532 above, “playback of the digital media content” that is “received” in “real time” to the extent this is considered to be a narrower limitation than the “during playback of the digital media content in real time” as recited for Claim 7 of the ‘494 Patent.

714. See also ¶¶ 561-569 above.

715. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” use “software” that delivers “marketing messages”

during “commercial breaks” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 92-93). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

716. Thus, Hite discloses “The system of claim 19” (as described above) wherein the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “stored in said addressable and reserved storage space” (for example, by storing commercials in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) and wherein “wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time” (for example, commercial processor in combination with receiver, frequency selector and detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a real time received digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site in real time).

717. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

718. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 28

28. The device of claim 19, wherein the particular advertising data is configured for presentation to an end user by a method selected from the group consisting of a dynamic insertion of the particular advertising data in or around a user selected media program, a transfer of the particular advertising data to a second end user device, a menu screen, a header, a footer, an picture in picture, a split screen, an overlay, a keyword search item, a user selectable interactive advertisement, and combinations thereof.

28. The device of claim 19, wherein the particular advertising data is configured for presentation to an end user by a method selected from the group consisting of a dynamic insertion of the particular advertising data in or around a user selected media program, a transfer of the particular advertising data to a second end user device, a menu screen, a header, a footer, an picture in picture, a split screen, an overlay, a keyword search item, a user selectable interactive advertisement, and combinations thereof.

719. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

720. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

721. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element.

722. With respect to showing that the "particular advertising data" is "configured for presentation to an end user" by "dynamic insertion of the particular advertising data in or around a user selected media program," Hite discloses this at least at ¶¶ 516-524 above and at ¶¶ 561-569 above. Note also that Hite discloses the use of "higher priority commercials" that are used to "target prospective viewers of a set of advertisements using database search and list selection procedures" (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the "context code" that "could be appended to the commercial's CID code" to be "compared with program identification codes appended to the program signals" such that a "commercial is displayed if it is in a specific channel or network or show" as in the example of "skiing equipment commercials would be shown during a skiing down hill racing competition" (emphasis added, see, for example, Ex. 1009 at 4:34-40).

723. With respect to showing that the “particular advertising data” is “configured for presentation to an end user” by “a transfer of the particular advertising data to a second end user device,” Hite discloses this at least at ¶¶ 539-543 above.

724. With respect to showing that the “particular advertising data” is “configured for presentation to an end user” by either “a keyword search item” or “a user selectable interactive advertisement,” Hite discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). Also, Hite discloses “A series of viewer reaction codes can be included to cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction” wherein the “relevant commercials could be for more detailed information about the same product or service” or “Alternatively, they could be for products or services which are likely to be of interest to the viewer based on the viewer's responses” such as when “a viewer who requests more information about children's aspirin may also be offered a subsequent commercial on children's chewable vitamins” (emphasis added, see, for example, Ex. 1009 at 4:52-61).

725. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” use “software” that prompts “end users to select additional addressable advertising information through video and photo galleries, interactive games, on screen requests for information, and mobile extensions” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp.93-98). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

726. Thus, Hite discloses “The system of claim 19” (as described above) wherein the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “configured for presentation to an end user by a method selected from the group consisting of a dynamic insertion of the particular advertising data in or around a user selected media program, a transfer of the particular advertising data to a second end user device, a menu screen, a header, a footer, an picture in picture, a split screen, an overlay, a keyword search item, a user selectable interactive advertisement, and combinations thereof” (for example, for each respective

enumerated “method” see the disclosure in Hite as summarized in each of ¶¶ 722-724 above).

727. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

728. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 32

32. The device of claim 19, wherein said device is a digital video recorder and wherein said at least one addressable and reserved storage space is a partitioned area of a hard disk drive.

32. The device of claim 19, wherein said device is a digital video recorder and wherein said at least one addressable and reserved storage space is a partitioned area of a hard disk drive.

729. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 19 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 587-657.

730. See ¶¶ 151 and 156 above regarding claim construction under the broadest reasonable interpretation for this claim element.

731. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored in Hite meets the antecedent limitation of the “said at least one addressable and reserved storage space” of this claim element.

732. At least because each “control device” such as “a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer” in Hite is described as able to “record” “digital video (commercials)” in its respective “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address,” then by definition each such “control device” exemplar is “a digital video recorder” under the plain and ordinary meaning of this term at the alleged time of the invention of the ‘494 Patent.

733. Hite discloses that the “storage devices used to implement this invention can be of any form which is economical at the time of construction” wherein “Examples include magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (emphasis added, see, for example, Ex. 1009 at 12:6-11). And Hite further discloses “the invention involves supplementary electronics built into set-top boxes, consumer electronics products, personal computers, plug-in modules for the Decoder

Interface of "cable ready" products, and other display devices" wherein such "electronics has the purpose of managing the display of special advertisements based on the needs and interests of the viewer" (emphasis added, see, for example, Ex. 1009 at 14:59-65). Hite discloses the use of "electronics built into set-top boxes, consumer electronics products, personal computers, ... and other display devices" for "managing the display of special advertisements based on the needs and interests of the viewer" (see, for example, Ex. 1009 at 14:60-65).

734. At the alleged time of the invention of the '494 Patent, "personal computers" were known to "record" or "play" multimedia content such as "digital video" to or from "storage devices" such as the "tapes, disks, and chips" comprised within or connected thereto such "personal computers". Hite discloses a plurality of such "disks," and discloses "personal computers" able to use multiple such "disks," wherein "disks" at the alleged time of the invention of the '494 Patent were commonly known as "hard disk drives". (see, for example, Ex. 1009 at 10:44-49, 14:60-65). Thus, Hite also discloses the situation where an entire "disk" (or "hard disk") is used as the "Video Storage Device". Since the "entirety" of a "hard disk" is also a "partitioned area of a hard disk drive" under the broadest reasonable interpretation, then Hite discloses the specific situation where the "Video Storage Device" or "individually addressable digital recording device (RD) with a unique address" is a "partitioned area of a hard disk drive".

735. To the extent that Patent Owner's infringement allegations with respect to Petitioner's products and services have any relevance to a validity analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" use "software" that prompts "end users to select additional addressable advertising information through video and photo galleries, interactive games, on screen requests for information, and mobile extensions" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 98-99). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

736. In addition, the '494 Patent acknowledges that the digital video recorder as prior art, for example, an "increasing array of data, data sources, and storage devices has resulted in numerous battles over the format in which the data is delivered and manipulated," such as "one of the more recent format battles is being played out over the fixture format for purchases of video products and music and other sound recordings," and that "[t]he invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, any other known electronic recorder/player" (see, for example, Ex. 1001 at Abstract, 1:60-65).

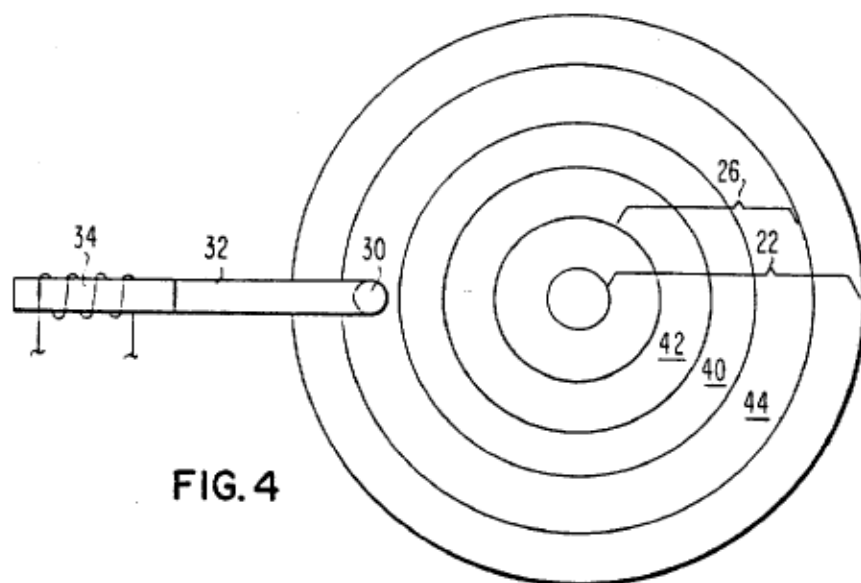
737. Thus, Hite discloses “The system of claim 19” (as described above) wherein said “device is a digital video recorder” (for example, a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site that records digital video commercials) and “wherein said at least one addressable and reserved storage space is a partitioned area of a hard disk drive” (for example, the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes is comprised of an entire hard disk).

738. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

739. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

740. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at

2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



741.

742. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

743. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

744. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1			
DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING

745.

746. Thus, Hill discloses that the “at least one addressable and reserved storage space is a partitioned area of a hard disk drive” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), and the “device is a

digital video recorder” is admitted to be well-known prior art by the ‘494 Patent (for example, “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, any other known electronic recorder/player”) (see ¶¶ 737 above) and/or Hite discloses that the “device is a digital video recorder” (see ¶¶ 736, 739 above).

747. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would have looked to Hill’s high access partition to further address a need identified by Hite to increase storage efficiency and accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers.” (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite’s

“commercial storage and playback device” and/or the “optional video storage device.” (see ¶¶ 202-205 above)

748. Baji also discloses a system and components for processing “commercial insertion on the side of a subscriber system” in which “the system sends a video data commercial requested by the subscriber” as provided by “access sequence table 155 disposed in a main control unit 106” where the “commercial insertion mode is defined in conformity with Table 1” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below.)

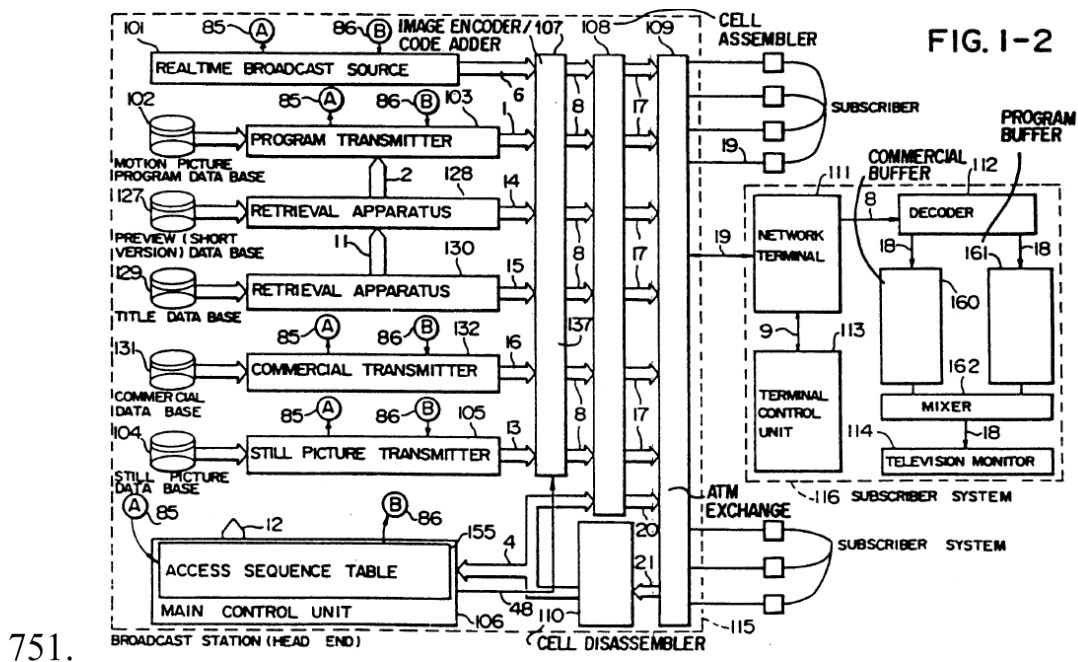
TABLE 1

Advertisement insertion modes				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

749.

750. Baji discloses that, in the “subscriber system” at the display site, there is “a commercial buffer 160 [to] temporarily store therein a commercial and a program buffer 161 for providing a wait time associated with a video signal from the video data base for the commercial insertion” and also that “a mixer 162 reads out video data from the commercial buffer 160 and the program buffer 161 according to the index so as to pass a composite or mixed signal to a television monitor 114” such that “a commercial and a program completely separated from

each other in the prior art can be mixed with each other at a point of time so as to display the resultant image,” enabling the combination of “a motion picture program” with a “commercial” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below). Because the subscriber system of Baji includes separate storage spaces for commercials (“commercial buffer 160”) and content (“program buffer 161”), it discloses storage that is just for advertising.



752. Baji discloses that “While displaying the video data from the program buffer 161 on the television monitor, the subscriber monitors the index added to the displayed frame” to determine when to insert a commercial, and that “the commercial and the program are displayed at the same time” as directed by the “content of the index” which may include the “coordinates on the monitor screen” where the commercial is to be inserted, and the “mixer 162 reads the content

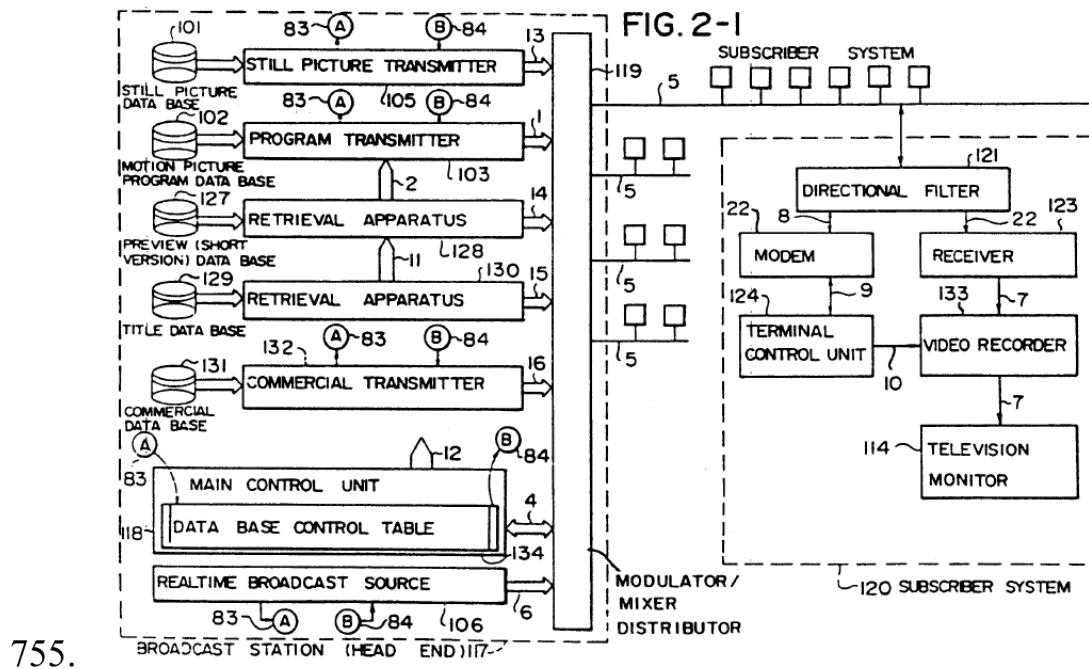
thereof so as to effect a proper operation to mix the images” (see, for example, Ex. 1025 at 9:3-16).

753. Baji generally discloses a broadcast system wherein multiple subscribers are all connected to the same broadcast station or head end 117. (see, for example, Ex. 1025 at FIG. 1-2, as reproduced above, FIG 2-1, as reproduced below). Baji also discloses that each subscriber system may include “a subscriber terminal 120, which comprises a directional filter 121 for separating up-link and down-link signals, a modulator/demodulator or modem 122 for handling control signals, a terminal control unit 124, a receiver 123, a television (TV) monitor 114, and a video recorder 133” and “a head end 117,” which includes “a program data base 102, a still picture data base 101, a commercial data base 131, a program transmitter 103, a commercial transmitter 132, and a main control unit 118” (see, for example, Ex. 1025 at 13:29-40, FIG 2-1, as reproduced below). From the head end, “a program and a commercial selected by a [particular] subscriber ‘a’ are sequentially transmitted via the modulator/mixer distributor 119 to the subscriber” in parallel with a “control information ‘User a open’ to initiate the video recorder 133 of the subscriber terminal 120, thereby recording the programs and commercials” and when the program and commercial transmission is finished, “a stop signal ‘User a close’ is delivered to terminate the operation of the video recorder 133” (see, for example, Ex. 1025 at 13:43-55). At the display site, the

“subscriber terminal 120 receives the control signals above by means of the modulator/demodulator or modem 122 and converts the information items into a terminal control signal 9” that instructs the “terminal control unit 124” to generate “a video recorder control signal 10” (see, for example, Ex. 1025 at 13:65-14:4; Fig. 2-1). Similar to subscriber “a,” “there is achieved the similar operation so as to sequentially conduct the down load operation of the desired programs and commercials for the subscribers ‘b’, ‘c’, etc” (see, for example, Ex. 1025 at 13:55-59).

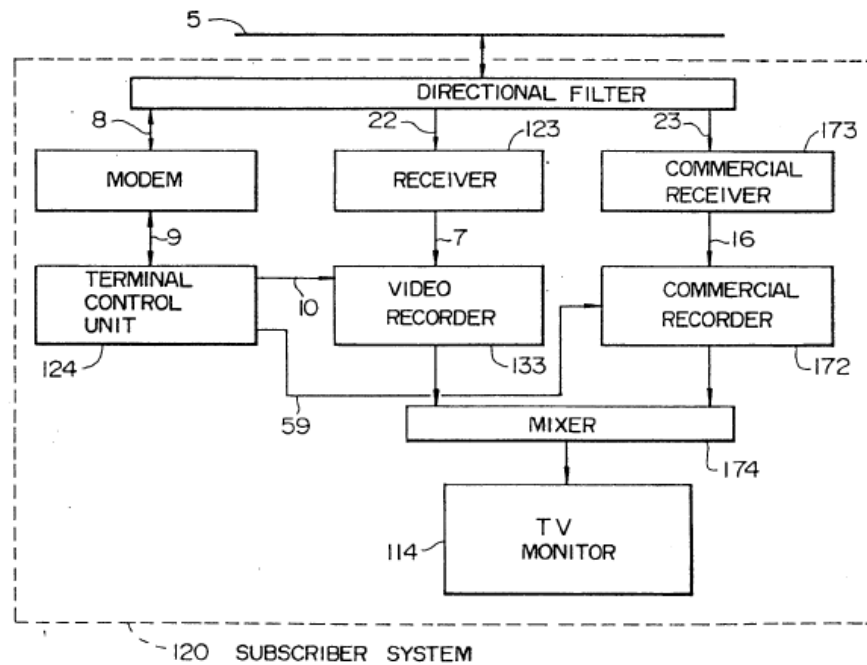
754. Nothing in the claim suggests that the particular advertising data must be delivered to the second end user receiver by the first end user receiver. However, it would have been obvious in view of the teachings of Baji to do so. Baji teaches the use of multiple subscriber systems (such as those discussed above as “a,” “b,” and “c” above). These subscriber systems are all a part of the same broadcast system. Further, “a program and a commercial selected by a [particular] subscriber ‘a’ are sequentially transmitted via the modulator/mixer distributor 119 to the subscriber.” (see, for example, Ex. 1025 at 13:57-59, FIG 2-1, as reproduced below). Thus, each subscriber terminal is capable of receiving commercial and program content. Each subscriber terminal is also capable of “transfer[ring] a desired program and a desired commercial information item to the broadcast station or head end 117.” (see, for example, Ex. 1025 at 14:17-20, FIG 2-1, as

reproduced below). Therefore, each subscriber terminal is also capable of using the included modem and directional filter to deliver items to other components of the broadcast system. It would have been obvious to use the broadcast system of Baji to deliver content between subscriber terminals in order to save the bandwidth and resources associated with the modulator/mixer distributor.



756. In addition to the components shown in Fig. 2-1, Baji's subscriber terminal may also include "a commercial recorder 172, a commercial receiver 173, and a mixer 174" (see, for example, Ex. 1025 at 15:60-64, Fig. 20, reproduced below).

FIG. 20

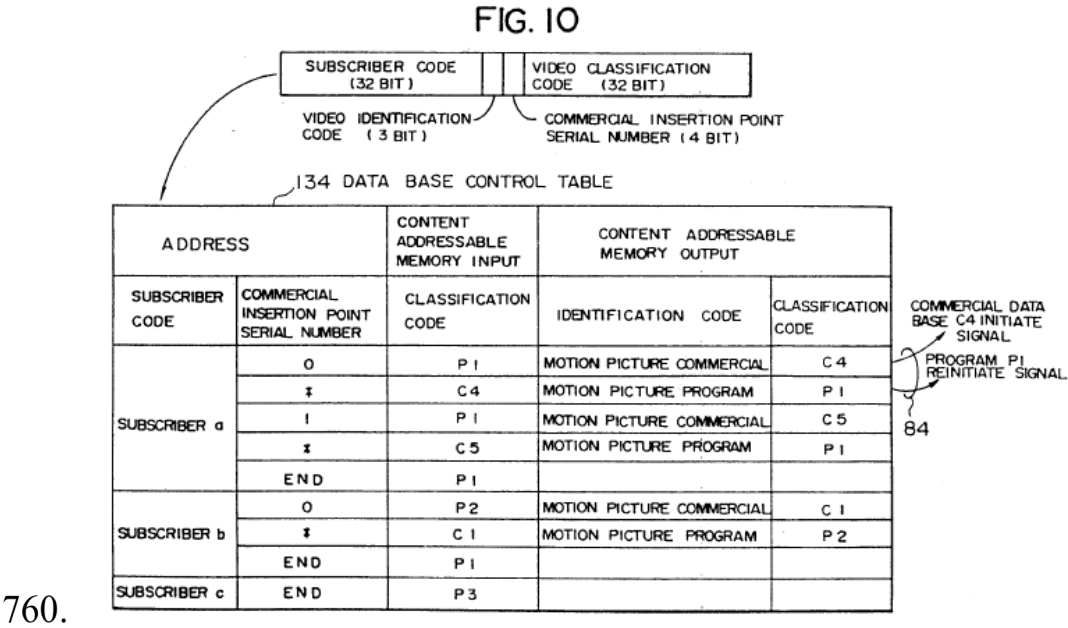


757.

758. Baji discloses “down-link control information” that is sent from a central server (which may be a “broadcast station” or “head end 117”) to the “subscriber terminal 120” where “each data packet includes a terminal identification code 93, a recorder control signal 94, and de-scramble information 95 employed to restore a scrambled video signal” and also “up-link control information” that is sent from a “subscriber terminal” to the “broadcast station or head end 117” that is used “to transfer a desired program and a desired commercial information item to the broadcast station or head end 117” (see, for example, Ex. 1025 at 14:5-29; Fig. 2-1, reproduced above).

759. Baji discloses that the “main control unit 105 of the head end 117” includes a “data base control table 134,” shown for example in Fig. 10, in which

“commercial insertion point” and “content addressable memory output” is controlled on a subscriber-by-subscriber basis, based on the subscriber’s associated “subscriber code” where the “content of the table 134 is updated or rewritten with up-link control information (see, for example, Ex. 1025 at 14:67-15:6; Fig. 10, reproduced below). Thus, Baji teaches that the head end communicates with each subscriber system (via “up-link” and “down-link” control information). Each subscriber system sends information about the content it wishes to receive and the head end then sends control information to each subscriber system that allows each system to download the appropriate content from the content database. Baji discloses a system wherein each subscriber system is able to transmit information surrounding the specific commercials and program content that they wish to view. Said information is then transmitted to the subscriber system and stored on local content. A digital video recorder is a device that allows a user to select specific content for recording on said device for later viewing by the user.



760.

761. Thus, Baji discloses “The device of claim 19” (as described above)

“wherein said device is a digital video recorder.”

762. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user (see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji’s use of a subscriber system that allows users to select the content it wishes to store and view to further address a need identified by Hite to accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to

those consumers,” particularly where the advertising involved a larger target audience of viewers (see, for example, Ex. 1009 at 3:21-35; Ex. 1025 at 13:28-61). Furthermore, the combination yields the completely predictable and desirable result that using a system for a user to select the content it wishes to save and view to meet user expectations and desires (see ¶¶ 213-217).

‘494 Patent: Claim 33

33. A system for providing targeted advertising to a plurality of multimedia content end users, comprising:

a central control unit operably connected to an advertising data server and in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data, wherein at least one of said addressable and reserved storage spaces associated with a particular individual end user account is reserved specifically for access to said digital advertising data by at least one separate corresponding one of a plurality of end user receiver devices; and

at least one processor comprising software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users and software configured to reserve said plurality of storage spaces, wherein each one of the end users is associated with a corresponding one of the end user receiver devices;

wherein said central control unit manages the delivery of the targeted advertising data from the advertising data server to one or more of the end user receiver devices.

33(a). A system for providing targeted advertising to a plurality of multimedia content end users, comprising:

763. In my opinion, this preamble claim element is a claim limitation.

764. See ¶ 150 above regarding claim construction under the broadest reasonable interpretation for this claim element.

765. As described in at least ¶¶ 405-417 above, Hite's disclosure of an "electronic system and a process for enhancing advertising by delivering TV and radio commercials targeted to individual viewer's based desires and needs" in Hite met the preamble limitation of "A system for providing targeted advertising to a multimedia content end user" for Claim 1 of the '494 Patent. This Claim 33 preamble differs only in that the singular phrase "a multimedia content end user" is modified to the phrase "a plurality of multimedia content end users". As discussed above with regard to Claim 16, Hite also discloses a "plurality of multimedia content end users."

766. Hite discloses in multiple instances that the system of Hite is intended for not just a single "end user" but rather for a "plurality" of "end users" as exemplified by numerous references to "consumers," "viewers," "viewer identifies," "households," "displays," "homes," "each viewer," "each viewing site," "customers," and "lists of consumers," each of which imply a "plurality" of such "end users" (see, for example, Ex. 1009 at 3:12, 3:22, 3:65, 4:1, 4:48, 5:3, 5:33, 5:35, 5:37, 7:55, 8:18, 8:19, 8:22, 8:31, 8:34, 8:66, 10:54, 10:59, 11:15, 11:24, 11:26).

767. Moreover, Hite specifically describes the "Media Origination Facility" as conveying "signals by electrical and/or optical connection **326** to an antenna for over the air transmission and or conveys the signals by electrical and/or

optical wire line connection **303** to a *plurality of Display Sites 400*” (emphasis added, see, for example, Ex. 1009 at 13:19-25, FIG. 4 as shown in ¶ 568 above).

768. Additionally, Claim 1 of Hite recites “A system for delivery of targeted advertisements to individual *consumers each having a display site*” (emphasis added, see, for example, Ex. 1009 at 15:8-9).

769. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “satellite television service” is a “system” that is alleged to be used “to deliver targeted advertising to Dish Network customers” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 100-101). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

770. Thus, Hite discloses a “system for providing targeted advertising” (system for targeting advertisements for display at consumer display sites) to a “plurality” (multiple simultaneous such display sites” of “multimedia content end users” (the consumers at the display sites that view the video/audio combined commercials).

771. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

772. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

33(b): a central control unit operably connected to an advertising data server and in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data,

773. See ¶ 151 regarding claim construction under the broadest reasonable interpretation for this claim element.

774. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites). Furthermore, as described in at least ¶¶ 483-493 above, Hite describes an “Advertisement Administration Facility,” with its “databases” that are used to match “commercials” to “programming” and “consumers” so that “[e]ach commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended,” that is an “advertising data server” and thus also “operably connected” to the disclosed “central control unit” of Hite at least because it is comprised within Hite’s disclosed “central control unit”.

775. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored at each “display site” in Hite meets the limitation of the “addressable and reserved storage space” of this claim element. Since Hite also discloses a “plurality” of such “display sites” (see, for example, ¶¶ 764-771 above), then Hite also necessarily discloses “a plurality of addressable and reserved storage spaces” as recited for this claim element.

776. As described in at least ¶¶ 439-452 above, Hite’s disclosure of “commercials that are targeted for consumption by a specific display site or consumer according to CID codes” and stored on a “Video Storage Device” in Hite meets the limitation of “particular advertising data” as stored on “addressable and reserved storage spaces,” and hence also meets the broader limitation of “digital advertising data” as stored on “addressable and reserved storage spaces” as recited for this claim element.

777. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that “manages delivery of the particular advertising data to said end user receiver for automatically storing the particular advertising

data in said at least one addressable and reserved storage space” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site where such commercials are stored without human intervention in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes). Since Hite also discloses a “plurality” of such “display sites” (see, for example, ¶¶ 764-771 above), then Hite’s disclosure of “manages delivery of the particular advertising data” to such “addressable and reserved storage spaces” also necessarily discloses the broader limitation of “in communication with” such “addressable and reserved storage spaces” as recited for this claim element.

778. Also, exemplary claim 63 within Hite recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for

comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

779. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “digital broadcast operations facilities” are a “Remote Server” that communicates with “DVR Devices” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp.101-102). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

780. Thus, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) that is “operably connected to an advertising data server” (for example, the Advertisement Administration Facility including its databases is an “advertising data server” and is “operably connected” by being comprised within the disclosed “central control unit”) and “in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data” (for example, the

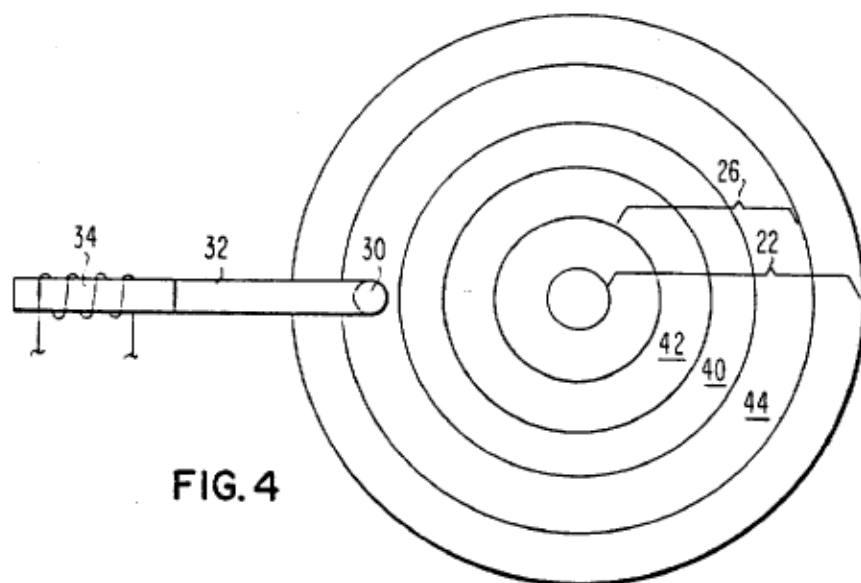
Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site where such commercials are stored without human intervention in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes).

781. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

782. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

783. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data

are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



784.

785. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

786. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

787. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

788.

789. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified

advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

790. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Hill to meet the limitation of this claim element at least because both prior art references are from the same field of art (digital data management systems) and are directed to systems where data is automatically stored in a particular storage section based on data characteristics and/or the application using the data (see, for example, Ex. 1010 at 2:47-57, 4:36-42). In addition, a person of ordinary skill in the art would have looked to Hill’s high access partition to further address a need identified by Hite to increase storage efficiency and accomplish the object of providing “advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers.” (see, for example, Ex. 1009 at 3:21-35, and Ex. 1010 at 4:54-57). Furthermore, the combination yields the completely predictable and desirable result that using a high access partition allocated for high access data storage of Hill to store the high access advertisement data of Hite would decrease read and write times of advertisement data stored in Hite’s

“commercial storage and playback device” and/or the “optional video storage device.” (see ¶¶ 202-205 above)

33(c): wherein at least one of said addressable and reserved storage spaces associated with a particular individual end user account is reserved specifically for access to said digital advertising data by at least one separate corresponding one of a plurality of end user receiver devices;

791. See ¶ 151 regarding claim construction under the broadest reasonable interpretation for this claim element.

792. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored at each “display site” in Hite meets the limitation of “at least one of said addressable and reserved storage spaces” of this claim element.

793. As described in at least ¶¶ 463-475 above, Hite’s disclosure of “control devices” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer” at each of a plurality of “consumer display sites” in Hite meets the limitation of “one of a plurality of end user receiver devices” of this claim element.

794. As described in at least ¶¶ 439-452 above, Hite’s disclosure of “commercials that are targeted for consumption by a specific display site or consumer according to CID codes” and stored on a “Video Storage Device” in Hite meets the limitation of “particular advertising data” as accessed from “addressable

and reserved storage spaces” associated with specific consumers, and hence also meets the broader limitation of “digital advertising data” as accessed from “at least one of said addressable and reserved storage spaces” associated with a specific consumer (or “particular individual end user account”) as recited for this claim element.

795. Hite describes a “series of viewer reaction codes” that can “cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (see, for example, Ex. 1009 at 4:52-61). Additionally, Hite discloses “viewer identification” that can be used to either associate or disassociate various such devices at a “display site”. For example, Hite describes a “registration code” that “is communicated back upstream to the signal origination site” and can comprise “a viewer identification number” that “is included in the acknowledgment messages centrally collected” (emphasis added, see, for example, Ex. 1009 at 4:62-5:6). Similarly, Hite describes a “certification code” that like the “registration code” is “communicated back upstream to the signal origination site” possibly with a “time and date stamp” added (see, for example, Ex. 1009 at 5:7-11). But in “the case of certification, the viewer responds to the advertisement” and this “response could be to answer a question, to merely make an

acknowledgment, or to request a coupon or other item of value” thereby indicating “that not only has the commercial been successfully displayed, but it has also been viewed, recognized, and acted upon” (see, for example, Ex. 1009 at 5:11-16).

796. Moreover, Hite notes “[t]he apparatus at the viewing site can store and process CIDs for multiple individuals at the viewing site” so that “[w]hen the viewer identifies himself or herself either directly or indirectly, the commercials appropriate to that individual are presented” (emphasis added, see, for example, Ex. 1009 at 8:39-43).

797. Hite also notes that there are “several options for the upstream transmission of registration or certification codes” including transmission “at the time the commercial was successfully received” and storage “at the receive site” for relay “to the signal origination site upon request or at a pre-programmed more convenient time,” and that such “upstream communication” can occur via “two-way cable systems, radio transmissions, telephonic communication, or the physical conveyance of a printed report, a magnetic, optical, electronic or other recorded report” (see, for example, Ex. 1009 at 5:17-27). See also ¶¶ 167-169, 171-172, 176-178, 181, 191, 196 and 199 above.

798. Also, exemplary claim 63 within Hite recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a

storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

799. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “digital broadcast operations facilities” are a “Remote Server” that communicates with “DVR Devices” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 101-102). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

800. Thus, Hite discloses “at least one of said addressable and reserved storage spaces” (for example, the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) being “associated with a particular individual end user account” (for example, via a viewer identification number) and being “reserved specifically for access to said digital advertising data by at least one separate corresponding one of a plurality of end user receiver devices” (for example, the Advertisement Administration Facility including its databases in

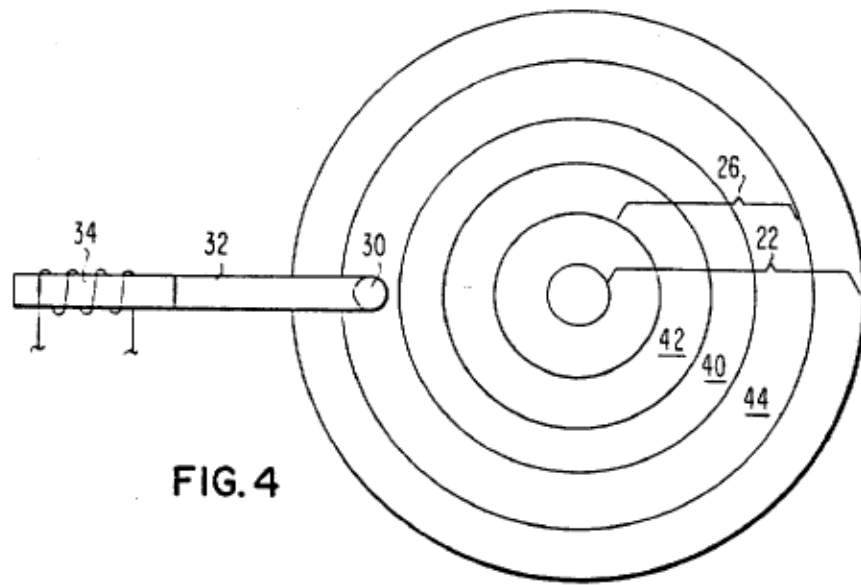
combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site where such commercials are stored without human intervention in the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes).

801. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

802. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

803. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at

2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



804.

805. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

806. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

807. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

808.

809. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified

advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

33(d): at least one processor comprising software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users and software configured to reserve said plurality of storage spaces, wherein each one of the end users is associated with a corresponding one of the end user receiver devices;

810. See ¶¶ 152 and 155 regarding claim construction under the broadest reasonable interpretation for this claim element.

811. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are stored at each “display site” in Hite meets the antecedent limitation of the “said storage space” of this claim element. Since Hite also discloses a “plurality” of such “display sites” (see, for example, ¶¶ 764-771 above), then Hite also necessarily discloses “said plurality of storage spaces” as recited for this claim element.

812. As described in at least ¶¶ 432-437 above, Hite’s disclosure of the “commercial processor” meets the limitation of the “at least one processor” of this claim element.

813. As described in at least ¶¶ 439-452 above and in view of the assumed equivalence of “predefined criteria data” and “suitability criteria data” under the broadest reasonable interpretation (see ¶ 155 above) and the plurality of “end users” described in Hite (see, for example, ¶¶ 764-771 above), Hite’s disclosure of “commercials that are targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to customer demographics or cost effectiveness” in Hite meets the limitation of the “particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users” of this claim element.

814. As described in at least ¶¶ 791-801 above, Hite’s disclosure of “viewer identification numbers” that associate a particular “viewer” (or “end user”) to a particular “control device” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site” meets the limitation of “each one of the end users is associated with a corresponding one of the end user receiver devices” of this claim element.

815. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

816. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18).

817. Moreover, Hite describes that “The appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants” as reflected in “an algorithm” that “can be devised and downloaded to the display

site” such that an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:18-27). Hite continues by disclosing “That algorithm is created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer” (emphasis added, see, for example, Ex. 1009 at 8:27-35).

818. Thus, Hite’s disclosure of an “algorithm” and “microcomputer program” that executes on a “processor” is a disclosure of “software” under the broadest reasonable interpretation of this claim.

819. Hite also discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the “context code” that “could be appended to the commercial's CID code” to be “compared with program identification codes appended to the program signals” such that a “commercial is displayed if it is in a specific channel or network or show” as in the example of

“skiing equipment commercials would be shown during a skiing down hill racing competition” (emphasis added, see, for example, Ex. 1009 at 4:34-40).

820. Similarly, Hite discloses that Hite’s system can “provide advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers who are desirable prospects” (emphasis added, see, for example, Ex. 1009 at 3:24-28). For example, Hite describes “targeting, delivering and displaying electronic advertising messages (commercials) within specified programming in one or more pre-determined households (or on specific display devices) while simultaneously preventing a commercial from being displayed in other households or on other displays for which it is not intended” (emphasis added, see, for example, Ex. 1009 at 5:29-36). And in another example, Hite describes “Commercial time or spots when addressable ads can be displayed will have a unique identifier code (CID)” wherein such “eligibility codes” can be applied “locally in local-avail spots” (emphasis added, see, for example, Ex. 1009 at 7:15-20).

821. Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30, FIG. 5 as annotated in ¶ 278 above). In particular, Hite discloses that the “commercial processor in the home would look for the CID in each incoming

commercial at a break during a broadcast program” so that “If there was a CID at a break, the *processor would apply the display rules for the stored, addressable ads*” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary” (emphasis added, see, for example, Ex. 1009 at 7:24-30).

822. Hite also discloses a “series of *viewer reaction codes*” that can “*cause additional relevant commercials to be presented* in reaction to a viewer's response to questions or other *viewer interaction*,” thereby enabling commercials “for products or services which are likely to be of interest to the viewer based on the viewer's responses” (emphasis added, see, for example, Ex. 1009 at 4:52-61). See also ¶¶ 167-173, 177-179, 181, 188-190, and 195-197 above.

823. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a *control device at the consumer display site*, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “*control device*” has “a *storage device for storing the plurality of advertisements*” and “a *comparator for comparing a code appended to each advertisement*” (emphasis added, see, for example, Ex. 1009 at 20:8-17).

824. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity

analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" have "software" alleged to "enable each individual TV commercial to have its own unique criteria" for display based upon "viewer patterns, Census data, ZIP+4, and even remote control usage" and alleged to "enable each individual TV commercial" to be "served up by household, street, subdivision, neighborhood, [etc.]" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 102-103). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

825. Thus, Hite discloses "at least one processor" (for example, commercial processor within a device at the consumer display site such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer executes an algorithm or microcomputer program) that comprises "software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users" (for example, the algorithm or microcomputer program executes on the commercial processor to select commercials that are targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to

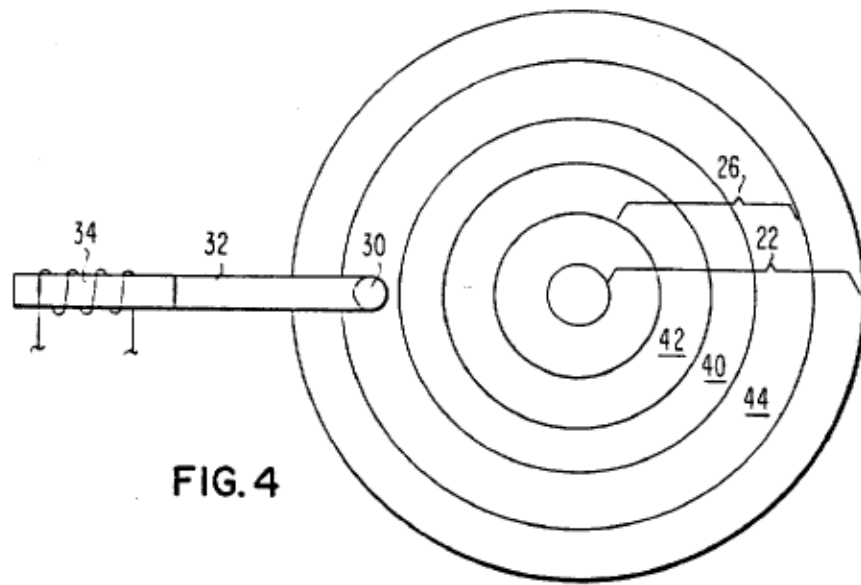
customer demographics or cost effectiveness) and that comprises “software configured to reserve said plurality of storage spaces” (for example, the algorithm or microcomputer program executes on the commercial processor to selectively store targeted commercials to the individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes), wherein “each one of the end users is associated with a corresponding one of the end user receiver devices” (for example, viewer identification numbers associate a particular viewer to a particular control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

826. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

827. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

828. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based

on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



829.

830. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

831. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

832. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1			
DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

833.

834. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified

advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

33(e): wherein said central control unit manages the delivery of the targeted advertising data from the advertising data server to one or more of the end user receiver devices.

835. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites). Furthermore, as described in at least ¶¶ 483-493 above, Hite describes an “Advertisement Administration Facility,” with its “databases” that are used to match “commercials” to “programming” and “consumers” so that “[e]ach commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended,” that is an “advertising data server” and is comprised within Hite’s disclosed “central control unit”.

836. As described in at least ¶¶ 463-475 above, Hite’s disclosure of “control devices” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer” at

each of a plurality of “consumer display sites” in Hite meets the limitation of “one or more of the end user receiver devices” of this claim element.

837. As described in at least ¶¶ 483-493 above, Hite discloses a “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that “manages delivery of the particular advertising data to said end user receiver” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to customer demographics or cost effectiveness to the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

838. Moreover, as described in at least ¶¶ 483-493 above, Hite describes an “Advertisement Administration Facility,” with its “databases” that are used to match “commercials” to “programming” and “consumers” so that “[e]ach commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended,” that is an “advertising data server” and that is comprised within the “central control unit” disclosed in Hite.

839. Additionally, as described in at least ¶¶ 810-826 above, Hite discloses that the “particular advertising data” that is managed for delivery to the one or more “end user receiver devices” based upon the “suitability criteria data” is the “targeted advertising data from the advertising data server” of this claim element.

840. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR Devices” have “software” for “dynamic insertion” of “targeted ads” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at p. 103). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

841. Thus, Hite discloses said “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) that “manages the delivery of the targeted advertising data from the advertising data server” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility delivers video/audio combined commercials that are

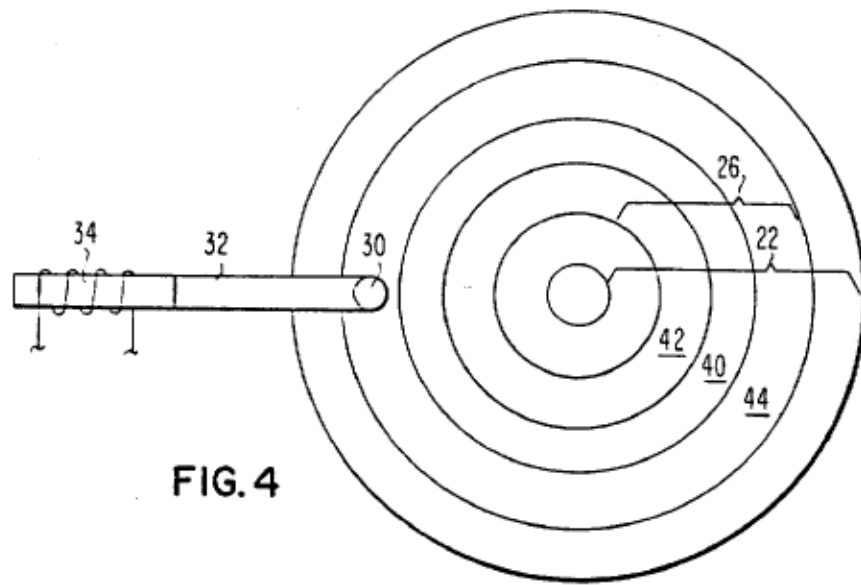
targeted for consumption by a specific display site or consumer according to CID codes wherein certain CID codes are directed to customer demographics or cost effectiveness from the Advertisement Administration Facility including its databases) to “one or more of the end user receiver devices” (for example, at least one the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

842. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

843. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

844. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage

characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).



845.

846. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

847. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more

effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

848. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

849.

850. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified

advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

‘494 Patent: Claim 34

34. The system of claim 33, wherein each of said addressable and reserved storage spaces are located within a corresponding one of the end user receiver devices.

34. The system of claim 33, wherein each of said addressable and reserved storage spaces are located within a corresponding one of the end user receiver devices.

851. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 33 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 763-850.

852. See ¶ 151 regarding claim construction under the broadest reasonable interpretation for this claim element.

853. As described in at least ¶¶ 405-417 above, Hite’s disclosure of the “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” to which the various commercials with CID codes are

stored at each “display site” in Hite meets the limitation of “each of said addressable and reserved storage spaces” of this claim element.

854. As described in at least ¶¶ 463-475 above, Hite’s disclosure of “control devices” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer” at each of a plurality of “consumer display sites” in Hite meets the limitation of “one of the end user receiver devices” of this claim element.

855. Also, as described in at least ¶¶ 463-475 above, Hite shows that “each of said addressable and reserved storage spaces” is “located within” a “corresponding one” of such “end user receiver devices” as recited for this claim element.

856. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are “receivers” and have “memory” that “is located internally” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 103-104). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

857. Thus, Hite discloses “The system of claim 33” (as described above) wherein “each of said addressable and reserved storage spaces” (for example, each individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes) is “located within a corresponding one of the end user receiver devices” (for example, a corresponding one of a control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer at the consumer display site).

858. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

859. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 35

35. The system of claim 33, wherein said central control unit is configured to process profile data to generate the suitability criteria data for use in selecting particular advertising data suitable for targeting at least one of the end users.

35. The system of claim 33, wherein said central control unit is configured to process profile data to generate the suitability criteria data for use in selecting particular advertising data suitable for targeting at least one of the end users.

860. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim

33 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 763-850.

861. See ¶¶ 152 and 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

862. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element.

863. As described in at least ¶¶ 439-452 above and in view of the assumed equivalence of "predefined criteria data" and "suitability criteria data" under the broadest reasonable interpretation (see ¶ 155 above), Hite's disclosure of "certain CID codes directed to customer demographics or cost effectiveness" in Hite meets the antecedent limitation of the "suitability criteria data" of this claim element.

864. As described in at least ¶¶ 483-493 above, Hite discloses a "central control unit" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility).

865. As described in at least ¶¶ 483-493 above, Hite discloses that this "central control unit" (for example, the Advertisement Administration Facility

including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) can “select” based upon “suitability criteria data” (for example, certain CID codes directed to customer demographics or cost effectiveness) the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) as opposed to other “advertising data” (for example, that includes commercials not targeted for consumption by a specific display site or consumer).

866. Hite discloses “At the point of usage, a Commercial Processor (CP) is programmed to find and analyze the CID codes in each commercial” such that “[w]hen a match between the CID in the commercial and the CID transmitted and stored at the point of use is found, the advertisement is then presented to the viewer” (emphasis added, see, for example, Ex. 1009 at 4:3-8). Additionally, Hite discloses an “algorithm” that is “created by the advertisement administrator and/or marketing organization which provides the commercials” wherein the “algorithm changes from time to time based on the nature of the commercials and the demographics of the viewers” and the “algorithm responds to information provided directly or indirectly by the viewer,” and wherein such an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the down loaded algorithm as a conventional microcomputer program” (emphasis added, see, for example, Ex. 1009 at 8:24-33).

867. More specifically, Hite shows as one exemplary “point of usage” that the “Advertisement Administration Facility” can comprise a “commercial processor” wherein “Commercials are received on a suitable media such as optical or magnetic tape or disks or via satellite and then locally recorded” and then “reproduced via a playback device **102** which conveys the signals via electrical and/or optical connection **104** to a commercial processor 106” so that “commercial processor 106 prepares the commercial for use in the system and process of this invention” such as appending “the appropriate CID code” (emphasis added, see, for example, Ex. 1009 at 9:58-66).

868. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” have a “processor” that executes “software” alleged to process “age, gender, and location” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 104-105). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

869. Thus, Hite discloses “The device of claim 33” (as described above) wherein “said central control unit” (for example, the Advertisement Administration

Facility including its databases in combination with the Advertisement

Transmission Facility and the Media Origination Facility) is “configured to process profile data to generate the suitability criteria data” (for example, Advertisement Administration Facility comprises a commercial processor that executes an algorithm that is a conventional microcomputer program to process CID codes such as viewer reaction codes to generate certain CID codes directed to customer demographics or cost effectiveness) for “use in selecting particular advertising data suitable for targeting at least one of the end users” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes).

870. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

871. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 36

36. The system of claim 35, wherein said central control unit manages delivery of the particular advertising data to one or more of said addressable and reserved storage spaces.

36. The system of claim 35, wherein said central control unit manages delivery of the particular advertising data to one or more of said addressable and reserved storage spaces.

872. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 35 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 860-871.

873. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

874. As described in at least ¶¶ 483-493 above, Hite discloses that this “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) “manages delivery of the particular advertising data to one or more of said addressable and reserved storage spaces” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes are delivered under control of the Advertisement Administration Facility to each individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes).

875. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be

relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" have a "processor" that executes "software" alleged to process "age, gender, and location" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1018 at p. 105). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

876. Thus, Hite discloses "The device of claim 35" (as described above) wherein "said central control unit" (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) "manages delivery of the particular advertising data to one or more of said addressable and reserved storage spaces" (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes are delivered under control of the Advertisement Administration Facility to each individually addressable digital recording device (RD) with a unique address or Video Storage Device that only stores CID codes and/or commercials with CID codes).

877. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

878. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also

renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

879. However, Hill also discloses a “data storage device” that is “partitioned” into separate storage spaces “having different access and storage characteristics” and “automatic placement of data on the partitioned device” based on the “storage characteristics of the data, where the storage characteristics of data are related to its volume and frequency of access” (see, for example, Ex. 1010 at 2:46-57). Hill discloses “partitioning a storage device, such as a direct access storage device, into a plurality of devices having different access and storage characteristics matched to the required performance” and “the automatic placement of data on that partitioned device” based on meeting “storage characteristics of data” (see, for example, Ex. 1010 at 2:47-57). The “storage characteristics of data” as used by Hill is based on “the access density of the data,” where “access density” is “defined as the number of accesses per unit of time divided by storage capacity or data volume” (see, for example, Ex. 1010 at 4:36-42). The “direct access storage device” may include “two disks 22 and 24,” each “coated with an upper and lower magnetic recording surface, such as 26, in which data signals may be written and from which they may be read by read/write transducer 30, mounted on actuator arm 32” (see, for example, Ex. 1010 at 3:17-19, 4:20-26, FIG. 4, as reproduced below). In addition, Hill discusses positioning “the high access

partition ... as a band 40 in the center of the recording surface 26, as is best illustrated in FIG. 4” to “minimize the travel distance of the actuator” when accessing the data in the high access partition (see, for example, Ex. 1010 at 6:64-68; Fig. 4, as reproduced below).

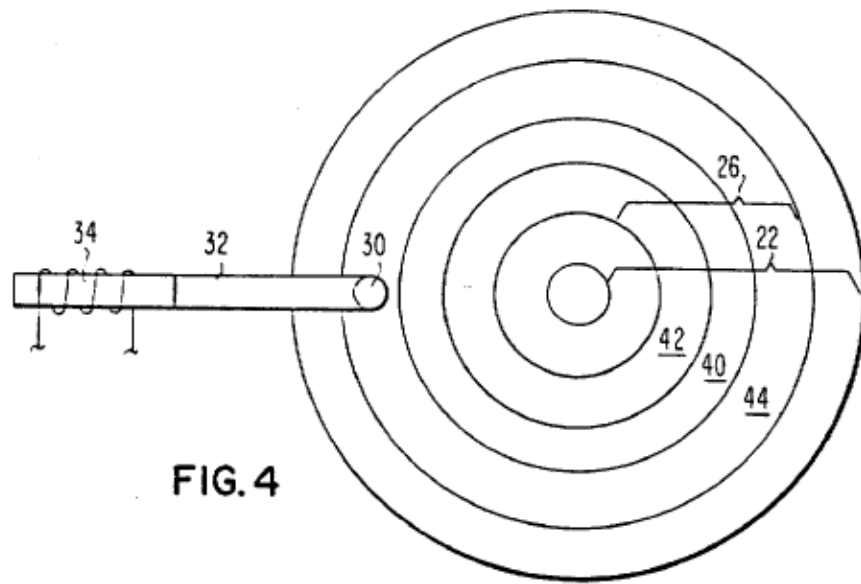


FIG. 4

880.

881. Hill describes “the partitioning of device 20 data recording surfaces 26 into high access and low access partitions 40 and 42, 44, respectively, and to the allocation of data records to these partitions based upon the storage characteristics of the data,” where the “high access partition 40” and the “low access partition 42, 44” may be “defined to the system processor as two unique devices, each having a unique identifier, number of cylinders, cylinder address offset, and level of partition” (see, for example, Ex. 1010 at 4:28-33, 7:9-12).

882. Once the “high access partition” and “low access partition” are created, “data is maintained on that logical device” according to “the storage characteristics of the data” such that “heavy utilization of particular data sets is handled by the system without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum by the more effective utilization of storage device(s) 20” (see, for example, Ex. 1010 at 8:15-25). Hill describes that a partition may be allocated to a particular data set where “[s]pace is then reserved on the device that has available space most nearly or substantially matching the access density of the data set” (see, for example, Ex. 1010 at 8:41-44).

883. In addition, Hill discloses that “the data set storage characteristics” may be “continuously monitored by the system while in operation, and those characteristics are updated, such as by storage in the Data Set Control Block (DSCB), Table 1”. (see, for example, Ex. 1010 at 9:20-23, Table 1, as reproduced below).

TABLE 1

DATA SET CONTROL BLOCK (DSCB)			
OFFSET	TYPE	LENGTH	DESCRIPTION
0	CHAR	44	DATA SET NAME
...	...	...	...
78	HEX	4	ACCESS DENSITY (D_D)
...	...	...	...
94	HEX	4	SIZE (CAPACITY, C_D)
98	HEX	3	ALLOCATION
101	HEX	2	LAST USED TRACK
...	...	...	BYTES REMAINING
...	...	...	...

884.

885. Thus, Hill discloses at least one “individually controlled and reserved storage section” (the storage device has a high access partition separate from a low access partition, each of which are separately defined and controlled by the system processor as unique devices, and where space on the high access partition is reserved for data with the same access density of the data set stored on the high access partition), that is “adapted specifically for storing the specifically identified advertising data” (the high access partition is designed to store high access data “without undue degradation (i.e., without device bottleneck), and the cost of storage of data records will be held to a minimum,” and Hite discloses local storage of a advertising data set that is accessed frequently, such as reading stored advertisement data during each preemptable time slot).

‘494 Patent: Claim 39

39. The system of claim 33, wherein the suitability criteria data is collected by at least one method selected from the group consisting of real time monitoring at least one activity of at least one of the end users, monitoring a search routine of at least one of the end users, monitoring a key word, monitoring an inquiry from at least one of the end users, monitoring a selection of media content by at least one of the end users, monitoring a selection of television programming by at least one of the end users, monitoring playback of a media program, monitoring an advertising preference of at least one of the end users, monitoring a product rental or purchase by at least one of the end users, and combinations thereof.

39. The system of claim 33, wherein the suitability criteria data is collected by at least one method selected from the group consisting of real time monitoring at least one activity of at least one of the end users, monitoring a search routine of at least one of the end users, monitoring a key word, monitoring an inquiry from

at least one of the end users, monitoring a selection of media content by at least one of the end users, monitoring a selection of television programming by at least one of the end users, monitoring playback of a media program, monitoring an advertising preference of at least one of the end users, monitoring a product rental or purchase by at least one of the end users, and combinations thereof.

886. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 33 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 763-850.

887. See ¶ 155 above regarding claim construction under the broadest reasonable interpretation for this claim element.

888. As described in at least ¶¶ 439-452 above and in view of the assumed equivalence of “predefined criteria data” and “suitability criteria data” under the broadest reasonable interpretation (see ¶ 155 above), Hite’s disclosure of “certain CID codes directed to customer demographics or cost effectiveness” in Hite meets the antecedent limitation of the “suitability criteria data” of this claim element.

889. See ¶¶ 506-509 above, which shows that Hite discloses in reference to Claim 5 of the ‘494 Patent several of the same limitations as the limitations recited in this Claim 39 of the ‘494 Patent.

890. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity

analysis of the asserted claims of the '494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner's "DVR devices" have "software" alleged to monitor "end user profile data, including user age, gender, viewer program ratings information, income and geography" and thus in Patent Owner's view meets the limitations of this claim element (see, for example, Ex. 1016 at pp. 65-66). In my opinion, Hite's disclosure as described above meets or exceeds Patent Owner's standard for showing disclosure of this claim element.

891. Thus, Hite discloses "The system of claim 33" (as described above) wherein the "suitability criteria data" (for example, certain CID codes directed to customer demographics or cost effectiveness) is "collected by at least one method selected from the group consisting of real time monitoring at least one activity of at least one of the end users, monitoring a search routine of at least one of the end users, monitoring a key word, monitoring an inquiry from at least one of the end users, monitoring a selection of media content by at least one of the end users, monitoring a selection of television programming by at least one of the end users, monitoring playback of a media program, monitoring an advertising preference of at least one of the end users, monitoring a product rental or purchase by at least one of the end users, and combinations thereof" (for example, a viewer reaction code

response identifies a specific “key word” or phrase such as children’s aspirin, a viewer reaction code response identifies in real time a specific “activity”).

892. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

893. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

‘494 Patent: Claim 41

41. The system of claim 33, wherein the particular advertising data associated with at least one of the end users is dynamically merged with digital media content to create merged digital media content that is delivered to at least one of the end users and stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content.

41. The system of claim 33, wherein the particular advertising data associated with at least one of the end users is dynamically merged with digital media content to create merged digital media content that is delivered to at least one of the end users and stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content.

894. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 33 of this claim element under either the broadest reasonable interpretation or the

various alternative interpretations described above for at least the reasons summarized in ¶¶ 763-850.

895. See ¶ 152 above regarding claim construction under the broadest reasonable interpretation for this claim element.

896. As described in at least ¶¶ 463-475 above, Hite's disclosure of "control devices" such as a "television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer" at each of a plurality of "consumer display sites" in Hite meets the limitation of "one of the end user receiver devices" of this claim element.

897. As described in at least ¶¶ 439-452 above, Hite's disclosure of "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" in Hite meets the antecedent limitation of the "particular advertising data" of this claim element. Additionally, Hite discloses "particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users" as described in at least ¶¶ 810-826 above, and hence also discloses the broader limitation of "particular advertising data associated with at least one of the end users" as recited for this claim element.

898. The remaining limitations of this Claim 41 of the '494 Patent are disclosed in Hite from either or both of the two following alternatives.

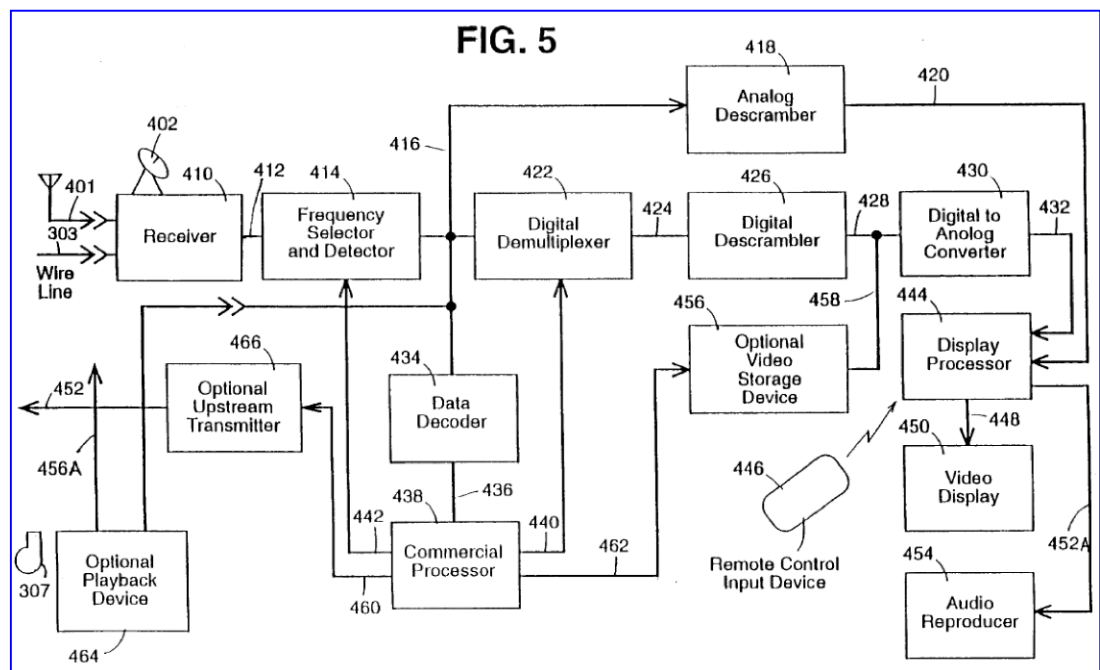
899. In the first alternative, the “particular advertising data associated with at least one of the end users” is “dynamically merged with digital media content to create merged digital media content” that is “stored in a storage space in a corresponding one of the end user receiver devices” as well as “delivered to at least one of the end users” for “presentation of the particular advertising data during playback of the merged digital media content,” as recited for this claim element, wherein such a “dynamic merge” and such a “storage” are shown in Hite as being within the “control device at the consumer display site” (or “end user receiver device”) as also disclosed in Hite.

900. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

901. Additionally, Hite discloses that the “commercial processor in the home would look for the CID in each incoming commercial at a break during a broadcast program” so that “If there was a CID at a break, the processor would apply the display rules for the stored, addressable ads” and “[i]f there was an ad to display, it would substitute the addressed ad for the default ad, and eliminate it from the ad queue as necessary,” thereby subsequently processing the target commercials according to content rules after storing them first (emphasis added, see, for example, Ex. 1009 at 7:24-30).

902. Hite also discloses specific exemplary circuitry within the “control device” such as a “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” or “personal computer” at the “consumer display site” as depicted in FIG. 5 of Hite as reproduced below. More specifically, Hite describes FIG. 5 wherein “receiver **410** preprocesses the signal and conveys it by electrical and/or optical connection **412** to a Frequency Selector and Detector **414** which then conveys the selected and demodulated baseband signals by electrical and/or optical connection **416** to a Data Decoder **434** which extracts data required by this invention” (see, for example, Ex. 1009 at 13:66-14:4). Continuing, Hite describes that “Commercial Processor **438** can select the frequencies received by the system by signals conveyed by electrical and/or optical connection **442** to Frequency Selector and Detector **414**” and “can select the data

stream processed by the digital portions of the system by the system by signals conveyed by electrical and/or optical connection **440** to the Digital Demultiplexer **422**” (emphasis added, see, for example, Ex. 1009 at 14:14-20). Moreover, Hite specifically discloses that “Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456” (emphasis added, see, for example, Ex. 1009 at 14:28-30).



903.

904. Continuing in reference to FIG. 5 as reproduced above, Hite describes “Digital signals which the customer is authorized to receive are descrambled and conveyed by electrical and/or optical connection 428 to a Digital to Analog Converter 430 which converts these signals into a form suitable for further processing and display” and “playback” of “certain commercials” stored in “Video Storage Device 456” under the “control of signals conveyed by electrical and/or

optical connection 462 from the Commercial Processor 438,” thereby merging at “connection 428” under processor control the digital media streams with the targeted commercials at appropriate commercial breaks (emphasis added, see, for example, Ex. 1009 at 14:33-46).

905. Moreover, Hite describes operation of the “commercial processor” at the “display site” as including the situation where “Appropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial's CID with that CID determined as appropriate for the display site” so that “[t]he broadcast with a break for a target commercial may then be transmitted with codes in the break” and “[i]f a match is found and only one commercial is stored, it may be displayed one or more times, depending on whether a frequency code is included” (emphasis added, see, for example, Ex. 1009 at 7:38-46). See also ¶¶ 167, 170-172, 174, 176-179, 181, and 194-197 above.

906. Also, the same exemplary claim 63 within Hite as referenced herein (see, for example, ¶ 413 above) recites “a control device at the consumer display site, the control device receiving a program and a plurality of advertisements for display at the display site” wherein such “control device” has “a storage device for storing the plurality of advertisements” and “a comparator for comparing a code appended to each advertisement and a code stored in the control device and for

displaying an advertisement in a break in the program when the codes match

(emphasis added, see, for example, Ex. 1009 at 20:8-20).

907. Hite's disclosure of this "connection 428" at the input to the "Digital to Analog Converter 430" within the "control device at the consumer display site" that comprises "signals" that represent the combination of the "program" and the "targeted commercials" that are inserted at a "break in the program" clearly discloses such "merged digital media content" that is "stored in a storage space in a corresponding one of the end user receiver devices," even if such "storage" is only ephemeral in time as part of the process of delivering the merged content to the end user during a play back.

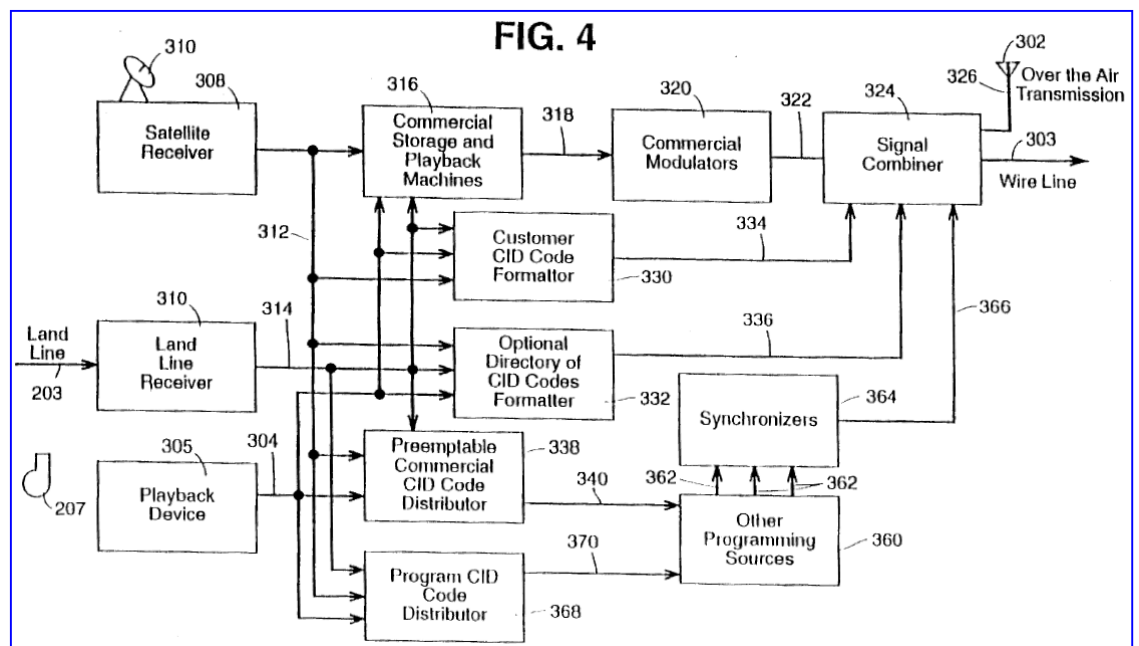
908. In the second alternative, the "particular advertising data associated with at least one of the end users" is "dynamically merged with digital media content to create merged digital media content" that is "stored in a storage space in a corresponding one of the end user receiver devices" as well as "delivered to at least one of the end users" for "presentation of the particular advertising data during playback of the merged digital media content," as recited for this claim element, wherein such a "dynamic merge" is shown in Hite as being within the "Media Origination Facility" (or "central control unit") as also disclosed in Hite and such a "storage" is shown in Hite as being within the "control device at the consumer display site" (or "end user receiver device") as also disclosed in Hite.

909. See ¶¶ 900-907 above.

910. Hite discloses “a fourth preferred embodiment of the system and process in accordance with the invention” that Hite notes “can be combined with any of the previous embodiments,” wherein “the channels with preemptable and conditionally preemptable commercials are synchronized at the signal origination source so that enhanced advertising can be inserted independent of which program is be watched” (emphasis added, see, for example, Ex. 1009 at 7:64-8:2, 8:16-17). Hite continues the description of this embodiment with “Not only is the commercial selected to fit the needs and wants of the viewer, but these more interesting commercials can be made to appear on a variety of programs” such that “The consumer becomes more reachable even in an environment consisting of hundreds of channels” and “[i]f the viewer changes channels to another channel with a preemptable commercial, the commercial is uninterrupted even though the channel indicator changes and indicates the new channel” (emphasis added, see, for example, Ex. 1009 at 8:3-11).

911. Also with respect to this second alternative, Hite describes “programming” that “is received” at the “Media Origination Facility” via “satellite, fiber, coaxial cable, twisted pairs, and other means and is represented by the Other Programming block 360” wherein the “Program CID Code Distributor **368** conveys CID codes by electrical and/or optical connection **370** for

combination with the programming signals” and “Other Programming 360 signals are conveyed by electrical and/or optical connections 362 to Synchronizers 364” (emphasis added, see, for example, Ex. 1009 at 13:32-39, FIG. 3 as reproduced below). Hite further describes that “*Programming with preemptable commercials is synchronized in the Synchronizer block 364*” such that “*synchronized signals with preemptable programming* and the other signals which have not been synchronized is *conveyed* by electrical and/or optical connection 366 to the Signal Combiner 324” which “*conveys the signals* by electrical and/or optical connection 326 to an antenna for over the air transmission and or conveys the signals by electrical and/or optical wire line connection 303 to a plurality of Display Sites 400” (emphasis added, see, for example, Ex. 1009 at 13:19-25, 13:39-46, FIG. 4 as reproduced below).



912.

913. Thus in Hite's second alternative disclosure, the "Advertisement Administration Facility" including its databases in combination with the "Advertisement Transmission Facility" and the "Media Origination Facility" (or "central control unit" of this Claim 41) is clearly disclosed as the entity that "combines" the "commercials that are targeted for consumption by a specific display site or consumer according to CID codes" (or "particular advertising data" of this Claim 41) with the "programming" or "channels" (or "digital media content" of this Claim 41) in order to create the "synchronized programming with targeted commercials" (or "merged digital media content" of this Claim 41) that is delivered to the end user during a play back.

914. As shown at least in ¶¶ 902-904 above, the "merged digital media content" of Hite's second alternative disclosure will also transit through multiple digital blocks in the "control device at the consumer display site" such as the "Digital Demultiplexer **422**," the "Digital Descrambler **426**" and the "Digital to Analog Converter **430**" (see, for example, Ex. 1009 at FIG. 5 as depicted in ¶ 903 above).

915. Hite's disclosure of these "Digital Demultiplexer **422**," the "Digital Descrambler **426**" and the "Digital to Analog Converter **430**" digital blocks, and their digital interconnects thereof, within the "control device at the consumer display site" that comprises "signals" that represent the combination of the

“program” and the “targeted commercials” that are inserted at a “break in the program” clearly discloses such “merged digital media content” that is “stored in a storage space in a corresponding one of the end user receiver devices,” even if such “storage” is only ephemeral in time as part of the process of delivering the merged content to the end user during a play back.

916. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” use “software” that performs “ “dynamic insertion” of “ads” during “commercial breaks” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1018 at pp. 107-108). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

917. Thus, Hite discloses “The system of claim 33” (as described above) wherein the “particular advertising data associated with at least one of the end users” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “dynamically merged with digital media content to create merged digital media content” (for example, commercial processor in combination with receiver, frequency selector and

detector, digital demultiplexer, video storage device, analog to digital converter, and various electrical or optical connections combine a digital data stream for a program with one or more targeted commercials at a commercial break in the program to provide a combined digital program/targeted commercial playback to the consumer at the display site) that is “delivered to at least one of the end users” (for example, the combined digital program/targeted commercial playback is presented to the viewer of the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site) and “stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content” (for example, the combined digital program/targeted commercial playback is stored at the input of a digital to analog converter within such a control device during the play back to the viewer).

918. Alternatively, Hite discloses “The system of claim 33” (as described above) wherein the “particular advertising data associated with at least one of the end users” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) is “dynamically merged with digital media content to create merged digital media content” (for example, a synchronizer and signal combiner within the Media Origination Facility combines

a digital data stream for a program with one or more targeted commercials at a commercial break in the program to enable a combined digital program/targeted commercial playback to the consumer at the display site) that is “delivered to at least one of the end users” (for example, the combined digital program/targeted commercial playback is presented to the viewer of the control device such as a television receiver, VCR, display device set-top-box or modular decoder associated with the video provider, or personal computer, at the consumer display site) and “stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content” (for example, the combined digital program/targeted commercial playback is stored within one or more digital blocks such as a digital demultiplexer, a digital descrambler, or a digital to analog converter within such a control device during the play back to the viewer).

919. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

920. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

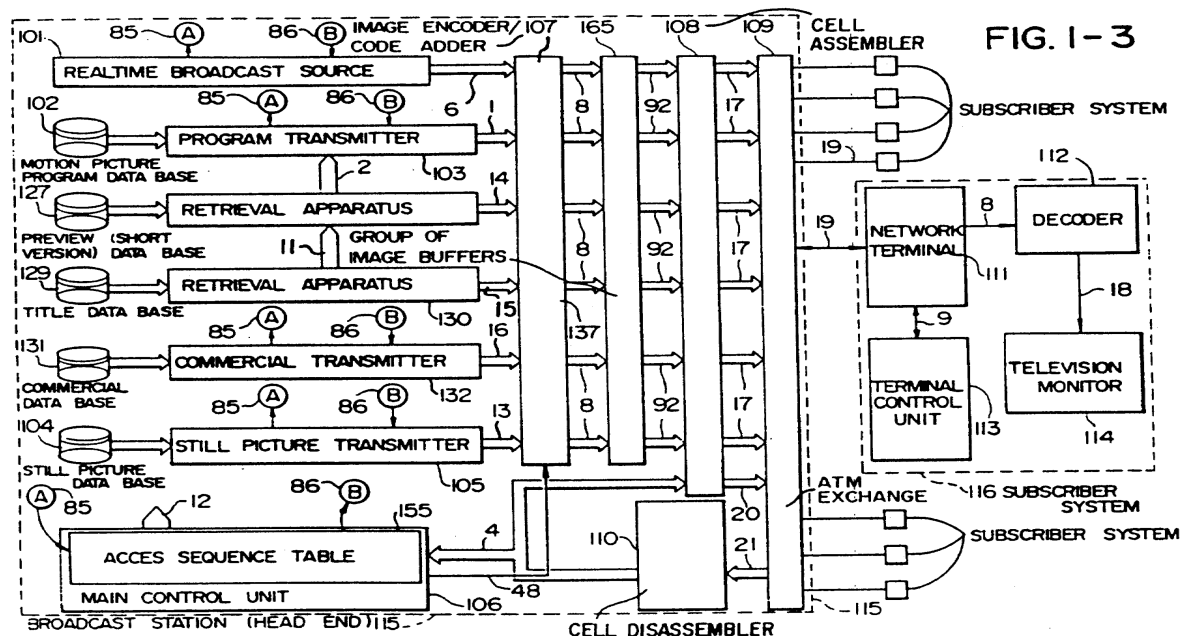
921. Baji also discloses a system and components for processing “commercial insertion on the side of a subscriber system” in which “the system sends a video data commercial requested by the subscriber” as provided by “access sequence table 155 disposed in a main control unit 106” where the “commercial insertion mode is defined in conformity with Table 1” (see, for example, Ex. 1025 at 8:30:45, FIG. 1-2, as reproduced below, Table 1, as reproduced below).

TABLE 1

<u>Advertisement insertion modes</u>				
Mode No.	Advertisement	Ad type	Insert position	Charge
1	Present			High
2	Present	Selective	Between programs	↑
3	Present	Selective	Within program	
4	Present	Not selective	Between programs	↓
5	Present	Not selective	Within program	Low
6	Present		Ad retrieval	Free
7	Present	Selective	Ad broadcast	Free
8	Present	Not selective	Ad broadcast	Free

922.

923. Baji further discloses the combining of the commercial content and program content at the head end before delivery to end users. Specifically, Baji discloses that “for simplifying the subscriber system 116, a group of video buffers 165 may be located on the side of the head end 115 as shown in FIG. 1-3,” wherein “[t]he operation and configuration . . . is similar to” the embodiment described above involving storage and mixing at the subscriber system. (see for example, Ex. 1025 at 11:6-23; FIG. 1-3, as reproduced below).



924.

925. According to this embodiment, “it is possible to delay the video signal so as to temporarily interrupt a program at a commercial insertion point such that the program is resumed after the commercial insertion and also to delay the commercial so as to be completely processed within the period of the temporary interruption of the program” to create a composite “signal 92” that may be delivered to an individual subscriber system. (see for example, Ex. 1025 at 11:11-23). This process “may be simultaneously effected for a plurality of subscribers so as to develop a high efficiency.” (see for example, Ex. 1025 at 11:28-31). Thus, the head end merges the desired programs and commercials on a user-by-user basis and transmits them to the individual end users.

926. Thus, Baji discloses “The system of claim 33” (as described above) wherein the “particular advertising data associated with at least one of the end

users” (for example, commercials stored in the commercial buffer at the subscriber system) is “dynamically merged with digital media content to create merged digital media content” (for example, program content is stored in a program buffer for subsequent playback after a delay and commercial content is stored at a commercial buffer for insertion according to instructions from advertisement insertion mode table and access sequence table, and that the mixer at the subscriber system is configured to mix the content of the separate commercial buffer and program buffer) that is “delivered to at least one of the end users” (for example, the mixer passes a composite or mixed signal to a television monitor, and cause content from both buffers to be displayed to the subscriber at the same time) and “stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content” (for example, the combined digital program/targeted commercial playback is stored at the mixer of the subscriber system before sending composite or mixed signal to the television monitor for play back to the viewer).

927. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Baji to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the insertion of advertisements into program content for display to the end user

(see, for example, Ex. 1009 at 1:7-10, 3:21-28; Ex. 1025 at 3:35-56). In addition, a person of ordinary skill in the art would have looked to Baji's local storage of pre-mixed or pre-merged advertising content to avoid delays associated with slow internet download speeds to further address a need identified by Hite to accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers" (see, for example, Ex. 1009 at 3:21-35; Ex. 1025 at 13:28-61). Furthermore, the combination yields the completely predictable and desirable result that local storage of pre-mixed or pre-merged content at each subscriber's system would avoid delays caused by slow internet download speeds and also delays from further processing the content before reproduction. (see ¶¶ 213-217).

928. To the extent that Hite is found to not disclose a storage space in one of the end user receivers for storing and later presenting digital media content, this element is disclosed by Barton.

929. Barton discloses a system for "time shifting of television broadcast signals" through "real time capture, storage, and display of television broadcast signals" (see, for example, Ex. 1026 at 1:6-9). Barton further discloses receiving "television (TV) input streams" which are parsed by a "parser" into "video and audio components" which are then "stored on a storage device" (see, for example, Ex. 1026 at 2:4-33). This incoming signal is encoded or converted into "an MPEG

stream” before storage (see, for example, 2:4-21). After receiving a request for playback by a user, the system of Barton converts the MPEG stream into TV output signals and delivers the TV output signals to a TV receiver (see, for example, Ex. 1026 at 2:4-33).

930. Thus, Barton discloses a system wherein digital media content is stored “in a storage space in a corresponding one of the end user receiver devices for presentation” (for example, the storage device wherein audio and video is stored as an MPEG stream and later delivered to a TV receiver).

931. Thus, Barton discloses “The system of claim 33” (as described above) wherein the “particular advertising data associated with at least one of the end users” (for example, commercials received in the television signal that are targeted for consumption by the television program’s target audience a specific display site or consumer according to CID codes) is “dynamically merged with digital media content to create merged digital media content” (for example, the television signal received includes the television program of interest to the viewer and commercials aired during commercial breaks, mixed or merged together in one signal) that is “delivered to at least one of the end users and stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content” (for example, the television signal that includes television program content and

advertising content mixed or merged together is received by the system and recorded for time-delayed or time shifted playback, the advertising and television program data being mixed or merged before reception by the end user).

932. In my opinion, a person of ordinary skill in the art at the time of the invention would have been specifically motivated to combine Hite with Barton to meet the limitation of this claim element at least because both prior art references are from the same field of art (video content distribution systems) and are directed to the efficient delivery of audio video content (see, for example, Ex. 1009 at 3:29-32; Ex. 1026 at 1:64-67). In addition, a person of ordinary skill in the art would have looked to Barton's use of a storage device to further address a need identified by Hite to accomplish the object of providing "advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers", particularly where the advertising involved a larger target audience of viewers (see, for example, Ex. 1009 at 3:21-35; Ex. 1026 at 2:4-33). Furthermore, the combination yields the completely predictable and desirable result of providing a local storage space for audio video content on an end user device so that the desired content may be pre-delivered to the user's system prior to presentation (see ¶¶ 929-931 above).

'494 Patent: Claim 43

43. The system of claim 33, wherein said system is configured to automatically produce at least one optimal advertising placement option for delivering targeted advertising data to at

least one of the end users, wherein the at least one optimal advertising placement option is based upon analysis of at least one criteria from a group consisting of: a total number of customers, customer profile data, customer suitability data, customer demographics, available storage space within at least one of the end user receiver devices, available advertising formats, available advertising schedules, advertising rates, ad placement timing, program schedules, product showcase schedules, cost effectiveness, and combinations thereof.

43. The system of claim 33, wherein said system is configured to automatically produce at least one optimal advertising placement option for delivering targeted advertising data to at least one of the end users, wherein the at least one optimal advertising placement option is based upon analysis of at least one criteria from a group consisting of: a total number of customers, customer profile data, customer suitability data, customer demographics, available storage space within at least one of the end user receiver devices, available advertising formats, available advertising schedules, advertising rates, ad placement timing, program schedules, product showcase schedules, cost effectiveness, and combinations thereof.

933. Hite either anticipates or one or more of Hite in view of the knowledge of a POSITA or Hite in view of Hill renders obvious the recited Claim 33 of this claim element under either the broadest reasonable interpretation or the various alternative interpretations described above for at least the reasons summarized in ¶¶ 763-850. I also note that the '494 Patent does not use the term “optimal” or outside of this claim.

934. See ¶ 154 above regarding claim construction under the broadest reasonable interpretation for this claim element.

935. Hite discloses that “Each commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a

“process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (emphasis added, see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (emphasis added, see, for example, Ex. 1009 at 6:60-7:3).

936. Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (emphasis added, see, for example, Ex. 1009 at 6:10-18).

Note further that Hite’s description of the “analyzing” performed by the “Commercial Processor (CP) at the display site” when executing the “algorithm” does not rely upon any “human intervention” and is thus performed “automatically” within Hite’s system.

937. Hite also discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database

search and list selection procedures” (emphasis added, see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the “context code” that “could be appended to the commercial's CID code” to be “compared with program identification codes appended to the program signals” such that a “commercial is displayed if it is in a specific channel or network or show” as in the example of “skiing equipment commercials would be shown during a skiing down hill racing competition” (emphasis added, see, for example, Ex. 1009 at 4:34-40).

938. Similarly, Hite discloses that Hite’s system can “provide advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers who are desirable prospects” (emphasis added, see, for example, Ex. 1009 at 3:24-28). For example, Hite describes “targeting, delivering and displaying electronic advertising messages (commercials) within specified programming in one or more pre-determined households (or on specific display devices) while simultaneously preventing a commercial from being displayed in other households or on other displays for which it is not intended” (emphasis added, see, for example, Ex. 1009 at 5:29-36). And in another example, Hite describes “Commercial time or spots when addressable ads can be displayed will have a unique identifier code (CID)” wherein such “eligibility codes” can be

applied “locally in local-avail spots” (emphasis added, see, for example, Ex. 1009 at 7:15-20). See also ¶¶ 167, 170-174, 176-179, 181, and 194-197 above.

939. To the extent that Patent Owner’s infringement allegations with respect to Petitioner’s products and services have any relevance to a validity analysis of the asserted claims of the ‘494 Patent (as Patent Owner alleges to be relevant, see, for example, ¶ 139 above), I note that Patent Owner alleges that Petitioner’s “DVR devices” are alleged to have “software” alleged to “communicate directly to individuals” and thus in Patent Owner’s view meets the limitations of this claim element (see, for example, Ex. 1017 at pp. 40-41). In my opinion, Hite’s disclosure as described above meets or exceeds Patent Owner’s standard for showing disclosure of this claim element.

940. Thus, Hite discloses “The system of claim 33” (as described above) wherein said system is “configured to automatically produce at least one optimal advertising placement option for delivering targeted advertising data to at least one of the end users” (for example, an algorithm executing on a commercial processor at a display site without human intervention analyses CID codes to match targeted attributes and produce commercials that are targeted for consumption by a specific display site or consumer according to CID codes) wherein “wherein the at least one optimal advertising placement option is based upon analysis of at least one criteria from a group consisting of: a total number of customers, customer profile data,

customer suitability data, customer demographics, available storage space within at least one of the end user receiver devices, available advertising formats, available advertising schedules, advertising rates, ad placement timing, program schedules, product showcase schedules, cost effectiveness, and combinations thereof” (for example, selected criteria disclosed in Hite include at least cost-effectiveness, customer profile data, and customer demographics).

941. Therefore, in my opinion, Hite discloses the limitations of this claim element under the broadest reasonable interpretation proposed herein.

942. At least because Hite discloses the limitations of this claim element, then Hite in view of the knowledge of a POSITA and/or in view of Hill also renders obvious the limitations of this claim element under the broadest reasonable interpretation proposed herein.

**X. UNPATENTABLE SUBJECT MATTER OF THE ‘494 UNDER 35
U.S.C. § 101**

**A. The claims are directed to the abstract idea of targeted
advertising**

943. As discussed above, I understand that a claim is unpatentable if the claim both: (1) is directed to an abstract idea and (2) fails to recite any “inventive concept.” As to the first prong, claims 1-7, 16, 19, 23-28, 32-36, 39, 41, and 43 are directed to the abstract idea of targeted advertising. That is, those claims are

directed to the abstract idea of selectively delivering and showing advertising to customers based on some characteristic of the customer that makes the advertisements potentially more effective. A simple example of targeting advertising is delivering and displaying ads for dog food only to dog owners. The bare concept of targeted advertising is therefore an abstract idea. Furthermore, as discussed below, the remaining claim limitations do not add any inventive concept to elevate the abstract idea of targeting advertising to a patentable invention.

944. Independent claims 1, 19, and 33 of the '494 Patent are directed to nothing more than a computer implemented application of the well-known and long-established concept of targeted advertising (see, for example, Ex. 1003 at 46:13-14; 46:22-25; 48:20-21; 48:30-33; 49:59-60; 50:2-10). Specifically, claim 1 is directed to “[a] system for providing targeted advertising to a multimedia content end user,” claim 19 is directed to “[a] device for providing targeted advertising to an end user,” and claim 33 is directed to “[a] system for providing targeted advertising to a plurality of multimedia content end users” (see, for example, Ex. 1003 at 46:13-14, 48:20-21, 49:59-60).

945. Other than reciting well-known aspects of targeted advertising, Claims 1, 19, and 33 only identify generic technological environments (i.e., the “storage device,” “processor,” and “software” of claim 1; the “input port,” “storage device,” addressable and reserved storage space,” and “processor” of claim 19; and

the “central control unit” and “processor” of claim 33) and/or add routine and conventional configuration of known components (see, for example, Ex. 1003 at 46:15-29, 48:22-33, 49:61-50:10).

946. For example, claim 1 recites: “at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data; at least one processor; and software implemented by said at least one processor” and “wherein said software further comprises a program to select particular advertising data suitable for targeting to at least one end user based upon predefined criteria data, wherein particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user” (see, for example, Ex. 1003 at 46:19-32).

947. For example, claim 19 recites “a central control unit operably connected to an advertising data server and in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data” and “at least one processor comprising software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users” and wherein “said central control unit manages the delivery of the targeted advertising data from the advertising data

server to one or more of the end user receiver devices” (see, for example, Ex. 1003 at 48:22-33).

948. For example, claim 33 recites “a central control unit operably connected to an advertising data server and in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data,” and “at least one processor comprising software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users” and “wherein said central control unit manages the delivery of the targeted advertising data from the advertising data server to one or more of the end user receiver devices” (see, for example, Ex. 1003 at 49:61-50:13).

949. The specification of the ‘494 Patent acknowledges that the hardware used to implement the claimed system were merely generic components of known computer systems, including, for example, that hard disk drives and other data storage were well known in the art (see, for example, Ex. 1003 at Abstract; 4:57–60; 5:3-6; 13:23-28; 13:51-57; 14:2-5; 14:29–35; 14:23-32; 14:43-47; 15:8-11; 15:1-3; 15:11–14; 15:40-43; 18:15-20; 18:39-44; 24:24-32; 24:66-25:5; and 37:29–32). Thus, the ’494 Patent itself reveals that the claims are not directed to any improvement of hardware or software.

B. Independent claims 1, 19, and 33 recite no “inventive concept” that amounts to significantly more than the abstract idea of targeted advertising

Independent Claim 1

950. The preamble of claim 1 recites “A system for providing targeted advertising to a multimedia content end user, comprising.” To the extent the preamble is limiting, these claim elements already exist in the prior art, as I discussed above with respect to the prior-art based rejections (see ¶¶ 396-404 above). The ’494 Patent acknowledges that “electronic commerce has blossomed on the Internet” and that there have been “new methods of transferring, storing, manipulating and accessing such data” (see, for example, Ex. 1003 at 2:17-19, 2:58-59). Thus, a person of skill in the art would understand that systems for providing targeted advertising to a multimedia content end user were well-known before the ’494 Patent.

951. Claim 1 further requires “at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data.” As I discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 406-414 above). As the ’494 Patent acknowledges, storage devices (such as, for example, hard drives or memory cards) for storing digital data, generally, and

digital advertising data were well known at the time of the alleged invention, and such data storage could be performed by generic computing components and was implemented using generic computing components, and (see, for example, Ex. 1003 at 24:66-25:5). Hite also teaches that “storage devices used to implement this invention can be of any form” including, for example, “magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (see, for example, Ex. 1009 at 12:6-11). In addition, partitioning a storage device into addressable and reserved storage spaces was well known in the art as of at least the 1980s, as shown by Hill (see ¶¶ 419-425 above).

952. Claim 1 further requires “at least one processor[] and software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space and wherein said software further comprises a program to select particular advertising data suitable for targeting to at least one end user based upon predefined criteria data” As I discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 432-438 above). For example, processors and software were conventional and well-known at the time of the alleged invention. As a further example, Hite’s “Video Storage Device” or “individually addressable digital recording device (RD) with a unique address” for storing various commercials with

CID codes meets the antecedent of the “said at least one addressable storage space” and the “said at least one addressable and reserved storage space” elements (see ¶ 412 above). Hite also discloses a “commercial processor” (see ¶ 432 above).

953. Furthermore, the '494 Patent acknowledges that “computers; home theater systems; home stereo receivers; CD recorders and/or players; audio and video multi-disc players; DAT recorders and/or players; Minidisc recorders and/or players; cassette tape recorders and/or players; televisions; VCRs; DVD players and/or recorders; Divx players; cable receivers;” [and] satellite receivers [were] consumer electronics known in the art” (see, for example, Ex. 1003 at 21:49-55). The '494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract). The '494 Patent provides that “The receiver unit 2 may incorporate any one or a combination of radio or television antennas, cable television receiver, satellite signal receiver, analog RCA input/output interfaces, digital optical or co-axial I/O ports, computer network I/O ports (e.g., serial, parallel, Ethernet, token ring, FIREWIRE and others known in the art) or any other digital or analog signal receiver and/or transmitter capable of accepting a signal transmitting any kind of digital or broadcast information” (see, for example, Ex. 1003 at 24:24-32). Thus,

each of the physical components recited by this element were well-known in the art at the time of filing.

954. Claim 1 further requires “wherein particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user.” This element does not add any structural element to the general computing components discussed above (see ¶¶ 949-953 above). Instead, this element merely recites storage of data in an earlier recited general storage device.

Independent Claim 19

955. The preamble of claim 19 recites “A device for providing targeted advertising to an end user.” To the extent the preamble is limiting, this element already existed in the prior art, as discussed above with respect to claim 1 (see ¶¶ 396-404, 950 above).

956. Claim 19 further requires “at least one input port for receiving digital multimedia data, wherein the digital multimedia data comprises particular advertising data for targeting to at least one end user based upon predefined criteria data associated with the at least one end user.” The use of input ports to receive digital multimedia data was well known at the time of the alleged invention of the ‘494 Patent. As I discussed above in claim 1, this element already existed in the prior art (see ¶ 951). The ‘494 Patent provides that the “receiver unit 2 may

incorporate any one or a combination of radio or television antennas, cable television receiver, satellite signal receiver, analog RCA input/output interfaces, digital optical or co-axial I/O ports, computer network I/O ports (e.g., serial, parallel, Ethernet, token ring, FIREWIRE and others known in the art) or any other digital or analog signal receiver and/or transmitter capable of accepting a signal transmitting any kind of digital or broadcast information.” Ex. 1003 at 24:24-32. Thus, the physical components recited by this element were well-known in the art at the time of filing. In addition, as discussed above with respect to claim 1[d], the receiving of multimedia data by the port includes advertising data targeted to the user based on predefined criteria was also well known in the art. (see ¶¶ 441-449, 461).

957. Claim 19 further requires “at least one storage device” and “at least one addressable and reserved storage space for storing the particular advertising data.” As I discussed above in claim 1, this element already existed in the prior art (see ¶ 951). Storage devices for storing digital data, generally, and digital advertising data were well known at the time of the alleged invention (see ¶ 951 above). The functionality of such a data storages can be performed by generic computing components and the ‘494 Patent acknowledges that the claimed data storage is implemented using generic computing components (see ¶ 951 above). In addition, Hite shows that this element was well-known in the prior art (see ¶¶ 606-

608, 951 above). For example, Hite discloses that “storage devices used to implement this invention can be of any form” such as “magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (see, for example, Ex. 1009 at 12:6-11).

958. Claim 19 further requires “at least one processor configured to reserve said at least one addressable storage space and to present the particular advertising data to the at least one end user.” As I discussed above in claim 1, this element already existed in the prior art (see ¶¶ 952-954). As I discussed above in claim 1, this element already existed in the prior art (see ¶ 954). The use of a processor to manage and reserve storage space and present advertising content to a user was well-known at the time of the alleged invention, which is also shown by Hite’s disclosure. (see ¶¶ 641-646, 952 above). Moreover, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 406-414, 441-449 above).

Independent Claim 33

959. The preamble of claim 33 recites “A system for providing targeted advertising to a plurality of multimedia content end users.” To the extent the preamble is limiting, these claim elements already exist in the prior art, as discussed above with respect to claim 1. (see ¶¶ 396-404, 950 above).

960. Claim 33 further requires “a central control unit operably connected to an advertising data server and in communication with a plurality of addressable and reserved storage spaces for storing digital advertising data, wherein at least one of said addressable and reserved storage spaces associated with a particular individual end user account is reserved specifically for access to said digital advertising data by at least one separate corresponding one of a plurality of end user receiver devices.” As I discussed above in claim 1, this element already existed in the prior art (see ¶¶ 952-954). As recited by claim 33, the “advertising data server” is a source for “digital advertising data” (see ¶¶ 65-70). Such a data source functionality could be performed by generic computing components and was implemented by the ‘494 Patent using generic computing components by the head-end systems and servers in well-known cable environments (see ¶¶ 65-70). These cable servers provided many types of multimedia data products, including television shows, movies, and advertisements.

961. Claim 33 further requires “at least one processor comprising software configured to select particular advertising data based upon analysis of suitability criteria data to produce targeted advertising data for at least one of a plurality of end users and software configured to reserve said plurality of storage spaces, wherein each one of the end users is associated with a corresponding one of the end user receiver devices.” As I discussed above in claim 1, this element already

existed in the prior art (see ¶¶ 952-954). Processors and software were conventional and well-known at the time of the alleged invention. This element merely recites uses for these well-known components for the purpose of selecting advertising to show to a user based on some criteria, which was consistent with the general use of these well-known components at the time. In addition, the '494 Patent acknowledges that “computers; home theater systems; home stereo receivers; CD recorders and/or players; audio and video multi-disc players; DAT recorders and/or players; Minidisc recorders and/or players; cassette tape recorders and/or players; televisions; VCRs; DVD players and/or recorders; Divx players; cable receivers; [and] satellite receivers [were] consumer electronics known in the art” (see, for example, Ex. 1003 at 21:49-55). The '494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract). Moreover, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references, and specifically, the use of a processor to reserve addressable storage space was well-known (see ¶¶ 792-809).

962. Claim 33 further requires wherein said central control unit manages the delivery of the targeted advertising data from the advertising data server to one

or more of the end user receiver devices.” As I discussed above in claim 1, this element already existed in the prior art (see ¶¶ 952-954). The “central control unit” is recited only as well-known components performing the well-known task of transferring data from one electronic device to another. In addition, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶ 811-834).

C. The dependent claims are also directed to the abstract idea of targeted advertising

963. Like independent claims 1, 19 and 33 discussed above, the elements of the dependent claims are directed to the abstract idea of targeted advertising.

964. Claim 2 depends from claim 1 and further requires “an end user receiver, wherein said at least one storage device that comprises said at least one addressable and reserved storage space is located within said end user receiver.” A person of ordinary skill in the art would have understood that an end user receiver was well known before the alleged invention of the ‘494 Patent. In addition, the ‘494 Patent acknowledges that “computers; home theater systems; home stereo receivers; CD recorders and/or players; audio and video multi-disc players; DAT recorders and/or players; Minidisc recorders and/or players; cassette tape recorders and/or players; televisions; VCRs; DVD players and/or recorders; Divx players; cable receivers; [and] satellite receivers [were] consumer electronics known in the

art” (see, for example, Ex. 1003 at 21:49-55). The ‘494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract). Moreover, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references, and specifically, the use of a processor to reserve addressable storage space was well-known (see ¶¶ 465-476).

965. Claim 3 depends from claim 2 and further requires “a central control unit in communication with said end user receiver, wherein said central control unit processes profile data associated with the at least one end user to generate the predefined criteria data, and manages delivery of the particular advertising data to said end user receiver for automatically storing the particular advertising data in said at least one addressable and reserved storage space.” The use of a central control unit to control receivers was well known in the art. For example, in cable television systems, head-end units were used to control receivers located at a customer premises. Moreover, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 482-494). The ‘494 Patent also states that “The invention may reside and operate on a variety of electronic

devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract).

966. Claim 4 depends from claim 1 and further requires that “the suitability criteria data comprises a key word.” The use of one or more key words as criteria for targeted advertising was also well known in the art. Key words were well-known as a compact manner to express a consumer’s preferences. Moreover, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 495-503).

967. Claim 5 depends from claim 1 and further requires that “the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program, monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, monitoring a broadcast time schedule, examining end user profile data, examining demographics, and combinations thereof.” Determining criteria data for targeted advertising to suitable end users by monitoring a user’s actions was well known by the time of the alleged invention of the ‘494 Patent. Moreover,

as discussed above, determining such suitability criteria data was well-known at the time of the alleged invention (see ¶¶ 504-513). For example, Hite discloses that “a viewer who requests more information about children's aspirin may also be offered a subsequent commercial on children's chewable vitamins” (see, for example, Ex. 1009 at 4:58-61).

968. Claim 6 depends from claim 1 and further requires that “the particular advertising data is stored in said at least one addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content for presenting the particular advertising to the at least one end user during playback of the digital media content.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 514-528). In particular, dynamically merging of advertising data with content data was a well-known technique for targeted advertising before the alleged invention of the ‘494 Patent (see also ¶¶ 514-528). The ‘494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract).

969. Claim 7 depends from claim 1 and further requires that “an end user receiver associated with the at least one end user, wherein the particular advertising data is stored in said at least one addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content in real time.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 529-536). In particular, dynamically merging of advertising data with content data was a well-known technique for targeted advertising before the alleged invention of the ‘494 Patent (see also ¶¶ 529-536). The ‘494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract).

970. Claim 16 depends from claim 1 and further requires that “the particular advertising data stored in said addressable and reserved storage space is located in a first end user receiver, wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver, wherein the central control unit communicates with the second end user receiver, and wherein the central control unit manages the delivery of the particular

advertising data to the second end user receiver.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 537-558). In particular, the storage of advertising data in end user receivers under the control of a central control unit was a well-known technique for targeted advertising before the alleged invention of the ‘494 Patent. (see also ¶¶ 537-558). The ‘494 Patent also states that “The invention may reside and operate on a variety of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, [or] any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract).

971. Claim 17 depends from claim 16 and further requires that “the particular advertising data is combined with digital media content to create combined digital media content and wherein the central control unit manages the delivery of the combined digital media content to the second end user receiver device.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 559-571). In particular, the storage of advertising data in end user receivers under the control of a central control unit was a well-known technique for targeted advertising before the alleged invention of the ‘494 Patent (see also ¶¶ 559-571). For example, Hite discloses a “Media Origination Facility” that not only facilitates the delivery of targeted commercials and appropriate CID

codes as described previously, but “also receives programming and commercials from other sources and creates some programming and commercials in its own facilities” (see, for example, Ex. 1009 at 9:28-31). In addition, as a “fourth preferred embodiment of the system and process in accordance with the invention” that “can be combined with any of the previous embodiments,” Hite discloses that “the channels with preemptable and conditionally preemptable commercials are synchronized at the signal origination source so that enhanced advertising can be inserted independent of which program is be watched” (see, for example, Ex. 1009 at 7:64-8:2, 8:16-17).

972. Claim 18 depends from claim 16 and further requires that “the second end user receiver is a portable digital recorder/player, and wherein said system maintains at least one record from a group consisting of: identification of the second end user receiver, identification of the portable digital recorder/player, identification of the delivery of the particular advertising data to the second end user receiver, identification of the particular advertising data, account information for the at least one end user, an access by the at least one end user of the particular advertising data, and combination thereof.” As discussed above with respect to the prior-art based rejections, these elements (such as a portable digital recorder/player and the claimed identifications) were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 575-586). In particular, the

storage of advertising data in end user receivers under the control of a central control unit was a well-known technique for targeted advertising before the alleged invention of the '494 Patent. For example, Hite discloses that at the "display site" "The Commercial Processor 438 can cause commercial signals to be stored or played back from the Optional Video Storage Device 456" wherein such a "digital recording device" is "installed at the display site in the television receiver, VCR, display device set-top-box or modular decoder associated with the video provider (cable, DBS, telephone, etc.)" (see, for example, Ex. 1009 at 6:62-66, 14:28-30). At the alleged time of the invention of the '494 Patent, such enumerated devices above, particularly when connected via "DBS" service (a wireless satellite communications transmission service across the entire continental USA), were known to "record" or "play" multimedia content from "storage media" such as the "tapes, disks, and chips" described in Hite wherein such devices were "portable". Furthermore, the '494 Patent acknowledges that "computers; home theater systems; home stereo receivers; CD recorders and/or players; audio and video multi-disc players; DAT recorders and/or players; Minidisc recorders and/or players; cassette tape recorders and/or players; televisions; VCRs; DVD players and/or recorders; Divx players; cable receivers;" [and] satellite receivers [were] consumer electronics known in the art" (see, for example, Ex. 1003 at 21:49-55). The '494 Patent also states that "The invention may reside and operate on a variety

of electronic devices such as televisions, VCRs, DVDs, personal computers, WebTV, any other known electronic recorder/player” (see, for example, Ex. 1003 at Abstract).

973. Claim 23 depends from claim 19 and further requires that “a central control unit located remote from said device is configured to perform a function selected from the group consisting of managing delivery of the data to the receiver, directing storage in the reserved storage space, dynamically merging with content, controlling sending an advertisement to a portable device, and combinations thereof, and wherein the central control unit processes profile data associated with the at least one end user to generate the suitability criteria data.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 658-669). For example, as described above regarding claim 3, Hite discloses a “central control unit located remote from said device” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility, which is distinct from the control device at each of the plurality of Display Sites) (see ¶¶ 482-494).

974. Claim 24 depends from claim 23 and further requires that “the central control unit comprises a software program to select, based upon the program

selectable criteria data associated with the at least one end user, the particular advertising data from the program selectable advertising data.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 670-688). For example, as described above with respect to claim 3, Hite discloses that this “central control unit” (for example, the Advertisement Administration Facility including its databases in combination with the Advertisement Transmission Facility and the Media Origination Facility) can “select” based upon “criteria data” (for example, certain CID codes directed to customer demographics or cost effectiveness) the “particular advertising data” (for example, commercials that are targeted for consumption by a specific display site or consumer according to CID codes) as opposed to other “advertising data” (for example, that includes commercials not targeted for consumption by a specific display site or consumer) (see ¶¶ 482-494).

975. Claim 25 depends from claim 19 and further requires that “the suitability criteria data is collected by at least one method selected from the group consisting of monitoring at least one activity of an end user, monitoring a search routine of an end user, monitoring a key word, monitoring an end user inquiry, monitoring a selection of media content by an end user, monitoring a selection of television programming by an end user, monitoring playback of a media program,

monitoring an advertising preference of an end user, monitoring a product rental or purchase by an end user, and combinations thereof.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 690-696, 504-513).

976. Claim 26 depends from claim 19 and further requires that “the particular advertising data is stored in said addressable and reserved storage space and wherein said at least one processor comprises processing circuitry configured to dynamically merge the particular advertising data with digital media content that is pre-stored in said at least one storage device for presenting the particular advertising to the at least one end user during playback of the digital media content.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 697-710). For example, as discussed above, Hite discloses “particular advertising data” and “at least one processor configured to reserve said at least one addressable and reserved storage space” (see ¶¶ 405-425, 439-451).

977. Claim 27 depends from claim 19 and further requires that “the particular advertising data is stored in said addressable and reserved storage space and wherein the particular advertising data is dynamically merged with digital

media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 711-718). For example, as discussed above, Hite discloses “particular advertising data” and “at least one processor configured to reserve said at least one addressable and reserved storage space” (see ¶¶ 405-425, 439-451). In addition, Hite discloses “the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time” (see ¶¶ 529-536).

978. Claim 28 depends from claim 19 and further requires that “the particular advertising data is configured for presentation to an end user by a method selected from the group consisting of a dynamic insertion of the particular advertising data in or around a user selected media program, a transfer of the particular advertising data to a second end user device, a menu screen, a header, a footer, an picture in picture, a split screen, an overlay, a keyword search item, a user selectable interactive advertisement, and combinations thereof.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see

¶¶ 719-728). For example, as discussed above, Hite discloses “particular advertising data” and “at least one processor configured to reserve said at least one addressable and reserved storage space” (see ¶¶ 405-425, 439-451). Hite discloses that the “particular advertising data” is “configured for presentation to an end user” by “dynamic insertion of the particular advertising data in or around a user selected media program” (see ¶¶ 514-528, 559-574). Hite also discloses “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures,” and that the “particular advertising data” is “configured for presentation to an end user” by “a transfer of the particular advertising data to a second end user device” (see, for example, Ex. 1009 at 3:56-58, 3:65-4:1; see also ¶¶ 537-558 above). With respect to “particular advertising data” that is “configured for presentation to an end user” by either “a keyword search item” or “a user selectable interactive advertisement,” Hite discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). Hite also discloses a “series of viewer reaction codes can be included to cause additional relevant commercials to be presented in reaction to a viewer's response to questions or other viewer interaction” where the “relevant commercials could be for more detailed information about the same product or service” or “Alternatively,

they could be for products or services which are likely to be of interest to the viewer based on the viewer's responses" such as when "a viewer who requests more information about children's aspirin may also be offered a subsequent commercial on children's chewable vitamins" (see, for example, Ex. 1009 at 4:52-61).

979. Claim 32 depends from claim 19 and further requires that "said device is a digital video recorder and wherein said at least one addressable and reserved storage space is a partitioned area of a hard disk drive." The specification of the '494 Patent acknowledges that the hardware used to implement the claimed system's storage was merely generic storage components of known computer systems, such as hard disk drives (also referred to as a "HDD") and other data storage that were well known in the art (see, for example, Ex. 1003 at Abstract; 5:3-6; 13:23-28, 15:1-3; 15:8-14). For example, the '494 Patent acknowledges that storage devices (such as, for example, hard drives or memory cards) for storing digital data, generally, and digital advertising data were well known at the time of the alleged invention, and such data storage could be performed by generic computing components and was implemented using generic computing components (see, for example, Ex. 1003 at 24:66-25:5).

980. In addition, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as

shown by the prior art references (see ¶¶ 729-739). For example, Hite shows that this element was well-known in the prior art (see ¶¶ 606-608, 608, 951 above). For example, Hite discloses that “storage devices used to implement this invention can be of any form” such as “magnetic, optical, and semiconductor implemented in tapes, disks, and chips as well as combinations of these technologies” (see, for example, Ex. 1009 at 12:6-11). Hill also shows that partitioning a storage device into addressable and reserved storage spaces was well known in the art as of at least the 1980s (see ¶¶ 740-747).

981. Claim 34 depends from claim 33 and further requires that “wherein each of said addressable and reserved storage spaces are located within a corresponding one of the end user receiver devices.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 851-859). For example, as discussed above, Hite discloses “each of said addressable and reserved storage spaces” within “one of the end user receiver devices” (see ¶¶ 405-425).

982. Claim 35 depends from claim 33 and further requires that the “central control unit is configured to process profile data to generate the suitability criteria data for use in selecting particular advertising data suitable for targeting at least one of the end users.” As discussed above with respect to the prior-art based

rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 860-871). For example, Hite discloses the use of “suitability criteria data” to select “particular advertising data” that is “targeted to at least one of the end users” (see ¶¶ 439-451).

983. Claim 36 depends from claim 35 and further requires that the “central control unit manages delivery of the particular advertising data to one or more of said addressable and reserved storage spaces.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 872-885). For example, as discussed above, Hite discloses “particular advertising data” delivered to “one or more of said addressable and reserved storage spaces” within “one of the end user receiver devices” (see ¶¶ 405-425, 439-451).

984. Claim 39 depends from claim 33 and further requires that “the suitability criteria data is collected by at least one method selected from the group consisting of real time monitoring at least one activity of at least one of the end users, monitoring a search routine of at least one of the end users, monitoring a key word, monitoring an inquiry from at least one of the end users, monitoring a selection of media content by at least one of the end users, monitoring a selection of television programming by at least one of the end users, monitoring playback of a media program, monitoring an advertising preference of at least one of the end

users, monitoring a product rental or purchase by at least one of the end users, and combinations thereof.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 504-513, 886-893). For example, as discussed above, Hite discloses “suitability criteria data” (for example, Hite’s disclosure of “certain CID codes directed to customer demographics or cost effectiveness” discloses the claimed (see ¶¶ 439-451).

985. Claim 41 depends from claim 33 and further requires that “the particular advertising data associated with at least one of the end users is dynamically merged with digital media content to create merged digital media content that is delivered to at least one of the end users and stored in a storage space in a corresponding one of the end user receiver devices for presentation of the particular advertising data during playback of the merged digital media content.” As discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 894-**Error! Reference source not found.**). For example, as discussed above, Hite discloses “particular advertising data” and storage within “one of the end user receiver devices” “one or more of said addressable and reserved storage spaces” within “one of the end user receiver devices” (see ¶¶ 405-425, 439-451). Hite also discloses that “[e]ach commercial is

analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (see, for example, Ex. 1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (see, for example, Ex. 1009 at 6:60-7:3).

986. Claim 43 depends from claim 33 and further requires that the “system is configured to automatically produce at least one optimal advertising placement option for delivering targeted advertising data to at least one of the end users, wherein the at least one optimal advertising placement option is based upon analysis of at least one criteria from a group consisting of: a total number of customers, customer profile data, customer suitability data, customer demographics, available storage space within at least one of the end user receiver devices, available advertising formats, available advertising schedules, advertising rates, ad placement timing, program schedules, product showcase schedules, cost effectiveness, and combinations thereof.” The term “advertising placement option” appears only once outside of the claim, in which the ‘494 Patent states

“once all format decisions are made by the advertiser, it may then place the desired advertising order for ‘instant’ or scheduled delivery to VPR/DMS 30 customers. For example, one available advertising placement option might indicate a selective customer base of 5,000,000 VPR/DMS 30 subscribers who have available space on advertising ‘sections’. Providing the advertiser has immediately available advertisement formats (audio/video/text, etc.) for transmission, then instantaneous advertisement delivery can be transmitted to the 5,000,000 qualified customers” (see, for example, Ex. 1003 at 32:51-57). That the advertising placement option scenario may be selected based on timing, cost-effectiveness, or the targeted audience size is fundamental to the abstract idea of targeted advertising and adds nothing inventive. The recitation of the term “placement options” therefore does not add any inventive substance to the abstract idea of targeting advertising.

987. Instead, as discussed above with respect to the prior-art based rejections, these elements were well-known at the time of the alleged invention as shown by the prior art references (see ¶¶ 933-942). For example, Hite discloses that “[e]ach commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended” based at least upon a “process” that is used “to target prospective viewers of a set of advertisements using database search and list selection procedures” such that “a set of appropriate CID codes for the prospective viewers” is “transmitted to the viewing device and stored” (see, for example, Ex.

1009 at 3:43-44, 3:65-4:2). Hite further describes the “television receiver, VCR, display device set-top-box or modular decoder associated with the video provider” at such a “display site” as being able to store “CID codes chosen for a particular display site (consumer)” (see, for example, Ex. 1009 at 6:60-7:3). Hite discloses that the “Commercial Processor (CP) at the display site would be programmed by an algorithm transmitted to the RD prior to the CID transmission to look for and analyze the CID in each incoming commercial” whereby “such analyzing in accordance with the algorithm” causes “the CID in each incoming commercial” to be “compared to the CIDs previously received and recorded by the RD” (see, for example, Ex. 1009 at 6:10-18). Hite also discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures” (see, for example, Ex. 1009 at 3:56-58, 3:65-4:1). Hite describes that “[t]he appropriate CIDs for each viewer are selected by a marketing organization which accumulates data on viewers to determine the commercials most appropriate to their individual needs and wants” as reflected in “an algorithm” that “can be devised and downloaded to the display site” such that an “inexpensive embedded microprocessor such as a member of the Intel 80386 family, can execute the downloaded algorithm as a conventional microcomputer program” (see, for example, Ex. 1009 at 8:18-27).

XI. CONCLUSION

988. In my opinion, the claims of the '494 Patent are invalid for at least the reasons stated above.

989. I reserve the right to supplement my opinions in the future to respond to any arguments raised by the owner of the '494 Patent and to take into account new information that becomes available to me.

990. I declare under penalty of perjury that all statements made herein are of my own knowledge and are true and correct.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "K. J. Negus", written over a horizontal line.

Kevin J. Negus

Date: January 12, 2017

ATTACHMENT A

Attachment A

Dr. Kevin J. Negus



Contact Information: kevin@tctwest.net, 650-472-1548
Updated: Jan. 26, 2015 PO Box 10850, Jackson, WY, 83001

2015 – Present: Montana Tech University
Current Position: Professor, Department of Electrical Engineering
Responsibilities: Research on 4G & 5G mobile broadband services to remote locations

2010 – Present: Fastback Networks
Current Position: Co-Founder, Chairman and Chief Technology Officer
Responsibilities: Corporate management, technology roadmap and team development

2004 – Present: Camp Ventures
Current Position: Chief Technology Partner (General Partner)
Responsibilities: Early Stage Investments, Product Development, Team Mentoring

2003 – Present: Technology Consultant
Example Clients: Cisco, Nokia, Motorola, Apple, RIM, HP, Dell, LSI, Verizon, Sprint, CSIRO
Responsibilities: Primarily expert witness consulting for patent litigations

June 2003 – Oct. 2007 - WiDeFi, Inc (acquired by Qualcomm in Oct. 2007).
Last Position Held: Executive Chairman
Responsibilities: Corporate Management, RF/baseband ASIC Development

Oct. 1998 – Nov. 2002: Proxim Corporation
Last Position Held: Chief Technology Officer
Responsibilities: ASIC Development, Standards, M&A Deals, OEM Deals, Patent Licensing

Feb. 1988 – Oct. 1998: Hewlett-Packard Company (acquired Avantek, Inc. in Nov 1991)
Last Position Held: Principal Systems Architect
Responsibilities: Management, RFIC Design, RF Systems, Core Technology

1977 –1988: Student Employment
Organizations: Fairchild Semiconductor, Waterloo Engineering Software, University of Waterloo, Wabush Mines, Chalk River Nuclear Labs, McDonald's, Canadian Armed Forces

Past Positions: Member of the FCC Technological Advisory Council (2000-2002)
Member of the Wyoming State Telecommunications Council (2001-2003)

Education: Ph.D., 1988, University of Waterloo (UW), Joint ME/EE Departments
M.A.Sc., 1985, University of Waterloo, Department of Mech. Engineering
B.A.Sc., 1984, University of Waterloo, Department of Mech. Engineering

Awards: 1985 UW Gold Medal, 1989 IEEE Best Paper, 2010 UW Alumni Award

Publications: Over 40 published articles and approximately 20 US patents

Start-up Company Engagements (1999 – Present)

Company	Products	Status	Engagement Type
Atheros	WiFi Chips	Sold to Qualcomm	Investor
Resonext	WiFi Chips	Sold to RFMD	Advisor
Athena	WiFi & Mobile TV Chips	Sold to Broadcom	Advisor
WinNet	Outdoor wireless systems	Sold to Alvarion	Investor
Cayman	DSL Modems	Sold to Motorola	Investor
Simple Devices	WLAN appliances	Sold to Motorola	Investor
MobileStar	WiFi Public Access	Sold to T-Mobile	Investor
Cymil	WiMax Chips	Liquidated	Advisor
Clarus	IP Telephony Tools	Liquidated	Investor
Mirra	Network Storage Devices	Sold to Seagate	Investor
WiDeFi	WiFi Chips	Sold to Qualcomm	Executive Chairman
Quorum	Cellular Terminal Chips	Sold to Spreadtrum	Investor, Advisor
Larian	IP Telephony Software	Sold to SS8	Investor, Chairman
TXE	Internet Software	Liquidated	Investor, Board
SiTime	MEMS-based Chips	Sold to MegaChips	Investor, Advisor
Picaboo	Digital Photo Books	Ongoing	Investor
MetroFi	WiFi Public Access	Liquidated	Investor
AirTight	Wireless Security Devices	Ongoing	Advisor
Seabridge	Internet Sports Marketing	Liquidated	Investor
Zing	Portable Music Appliances	Sold to Dell	Investor
Mojix	RFID Readers	Ongoing	Advisor
Tribal Shout	Telephony Internet Access	Liquidated	Investor, Chairman
Quantance	Cellular Terminal Chips	Ongoing	Investor, Advisor, Board
Lemon	Mobile Payment System	Sold to LifeLock	Investor
GainSpan	WiFi Chips and Modules	Ongoing	Board, Advisor
Tasting Room	Internet Commerce	Liquidated	Investor
Work Simple	Internet Software	Liquidated	Investor
Cloud	IP Telephony Appliances	Liquidated	Investor
Qik	Mobile Video Sharing	Sold to Skype	Investor
Small Demons	Online books	Liquidated	Investor
All Trails	Mobile application	Ongoing	Investor

Detailed Past Employment Experience:

June 2003 – Oct. 2007 - WiDeFi, Inc.

Location: Melbourne, FL
Position Held: Executive Chairman
Earlier Position: Management and Technology Advisor (prior to June 2003)
Responsibilities: Management, RF/baseband ASIC Development

Management:

- Led Board of Directors as Independent representative of both common and preferred shareholders
- Responsible for performance evaluation of the CEO and executive staff
- Conducted search for and hired new CEO while retaining early stage CEO as a critical technology contributor (CTO)
- Participated in all financing rounds and the eventual sale of the company

ASIC Development:

- Provided key technology and management interface to outsourced ASIC design partner Atmel in Colorado Springs
- Co-inventor of core technology architecture
- Conducted detailed technical reviews of ASIC development at both circuit and system design levels
- Assisted in debugging technical problems encountered with prototype devices

Oct. 1998 – Nov. 2002 - Proxim Corporation

Location: Sunnyvale, CA
Last Position Held: Chief Technology Officer
Earlier Positions: VP Corporate Development, VP Business Development
Responsibilities: ASIC Development, Standards, M&A Deals, OEM Deals, Patent Licensing

ASIC Development:

- Recruited and managed a 20 person ASIC development team including systems architects, modem designers, ASIC designers, verification engineers, and firmware engineers
- Defined product requirements for Phoenix - a 130 nm 4M gate ASIC based on software defined radio for 802.11/16 WLAN/WMAN (project was cancelled in Nov 2002 about 3 months prior to tapeout)
- Phoenix contained full MAC and PHY for 802.11a/b/g, draft 802.11n and 802.16a/d/e with Proxim-proprietary MAC and PHY extensions and additional modes for point to point communication up to 200 Mb/s
- Core of Phoenix was an SDR fabric that extended a MIPS 4KE processor core to implement blocks such as an iterative soft-input/output Viterbi decoder, IFFT/FFT, FEC encoders, interleavers, mappers, etc
- MAC in Phoenix was 95%+ firmware based on a second MIPS core
- Security features in Phoenix included support for 802.11i (AES), TKIP, 802.1x, Radius, WEP, and Proxim proprietary modes
- I/O's included Ethernet, PCI, and USB 2.0
- Analog I/F's included dual 12 bit ADCs and DACs at 80 Ms/s

- Also drove development of the PX82475 – a 0.18 um 1M gate ARM-based ASIC for HomeRF 2.0, 1.2 and OpenAir standards that included world's first MLSE-based equalizer operating at 10 Mb/s for 4-level GMSK in a 3.5 MHz channel bandwidth (project started May 1999, taped out Nov 2000, volume production Jun 2001)

Standards:

- Directed Proxim's involvement with 802.11 and 802.16 standards groups
- Voting member of the 802.11 standards committee – most active with 802.11g, 802.11h and the WNG-SC process that launched 802.11n
- Directed Proxim's involvement with the HomeRF Working Group
- Former Chairman of both the Technical Subcommittee and the Board of Directors of HomeRF
- Successfully led a coalition of over 50 companies to convince the FCC to significantly modify the Part 15.247 2.4 GHz band rules in 1999 and 2000 against a powerful and organized opposition with much greater funding
- Accepted nomination to the FCC's Technological Advisory Committee and served alongside CTOs of major companies such as Motorola, Intel, Disney, Panasonic, Siemens and many others to advise the FCC on wireless broadband strategies to benefit all US residents
- Nominated by the Governor and elected by Senate confirmation to the Wyoming State Telecommunications Council to advise the Governor on pending state legislation regarding telecom matters

M&A Deals:

- Completed eight separate M&A transactions including Wavespan, Farallon, Micrilor, Siemens US Cordless R&D, Card Access, nBand, Orinoco, and Western Multiplex
- Last deal was an ~\$600M sale of Proxim, Inc. (Nasdaq: PROX) to Western Multiplex Corp (Nasdaq: WMUX) in Mar. 2002
- After the sale of Proxim, Inc., WMUX changed its company name to Proxim Corporation, changed its stock symbol to PROX, filed for bankruptcy in 2005, sold assets to Terabeam, Inc. (Nasdaq: TRBM) and the WMUX business unit was renamed Proxim Wireless Corporation
- Responsibilities for M&A deals included all technical diligence including patents, retaining key employees, negotiating purchase terms, and in two cases assuming direct line reporting for the purchased companies
- Led 5 venture investments including Atheros, WinNet, Cayman, Simple Devices and MobileStar

OEM Deals:

- Developed and negotiated 3 largest OEM deals in the company's history with Intel, Motorola and Siemens
- Each OEM partner made \$10M equity investments in Proxim, Inc. (these investments each represented ~3-4% of the market capitalization of Proxim at the time they were made)

Patent Licensing:

- Corporate representative for licensing program including patent litigation
- Provided numerous 30(b)6 depositions for technical and business issues
- Testified at trial as fact witness on technical issues
- Filed 5 US patent applications for WLAN PHY & MAC layer inventions

Feb. 1988 – Oct. 1998 - Hewlett-Packard Company (acquired Avantek, Inc. Nov 1991)

- Location: Palo Alto, CA
- Last Position Held: Principle Systems Architect
- Earlier Positions: Director of RFIC Chipset Development, Manager of Silicon RFIC Design, Member of the Technical Staff
- Responsibilities: Management, RFIC Development, RF Systems, Core Technology
- Management:
- At departure, the RF Components division had over \$100M per year in revenue from products developed under my leadership
 - Negotiated strategic supply agreements for wafer fabrication
 - Managed a team of about 20 engineers reporting via 3 1st level managers for RFIC development in multiple technology specialties
 - Ran complex chipset development programs, such as the world's first 802.11 RF chipset, or such as a complete IS-95 transmit and receive chain with resources spread across Europe, North America and Asia
 - Organized and led a joint venture program with a former East German microelectronics company
- RFIC Development:
- Personally designed over 20 RFIC products
 - Designed world's first highly integrated digital cell phone transmit RFIC
 - Designed world's first highly integrated receive RFIC for GPS
 - Designed world's first 4 Gb/s 4:1 MUX/DEMUX ICs in silicon bipolar
 - Designed world's first spec-compliant, fully monolithic silicon VCO for wireless communications standards
 - Designed RFICs specifically for GSM, DECT, IS-95, 802.11, HomeRF, CT-2, DBS and other wireless standards
 - Designed in silicon bipolar, gallium arsenide MESFET and BiCMOS
 - Designed such RF blocks as mixers, synthesizers, low noise amplifiers, power amplifiers, switches, variable gain amplifiers, phase shifters, limiters, discriminators, voltage-controlled oscillators, modulators and demodulators
- RF Systems:
- Defined complete chipsets including performance characteristics and system architecture for HomeRF, 802.11, IS-95B and GSM
 - Partnered with baseband suppliers such as TI, VLSI, AMD, and others on reference designs for various wireless devices
 - Partnered with reference design consultancies including Symbionics, TTPCom, Wavecom, RTX and others
- Core Technology:
- Developed a proprietary silicon device simulation model used by HP/Avantek to enhance first pass design success
 - Primary standards monitor for HP RF Components on such efforts as 802.11, HomeRF, IS-54, IS-95, GSM, DECT, HiperLAN, and 3GPP
 - Lead liaison with HP Labs on wireless research
 - Lead liaison with HP Product Divisions for WLAN products and FCC policy
 - Co-author of HP Company Strategic Plan for Wireless Technology across all of HP's Measurement, Components, Computing and Printing businesses
 - Filed several patent applications for RFIC designs

May 1986 – Nov. 1987 - Fairchild Semiconductor

Location: Palo Alto, CA
Position Held: Research Engineer (consultant-basis only Sep. 1986 – Nov. 1987)
Projects: - Design of bipolar circuits for high speed ECL and telecom applications
- Development of packages for high speed circuits (patent granted)
- Optimization of clock chip for Clipper (world's first RISC processor)

Sep. 1986 – Dec. 1987 - Waterloo Engineering Software

Location: Waterloo, Canada
Position Held: Sales Engineer
Projects: - Venture-funded startup with 10 employees sold in late 1987
- Sold silicon device simulation software worldwide

May. 1981 – Dec. 1987 - University of Waterloo

Location: Waterloo, Canada
Last Position Held: Research Engineer
Earlier Positions: Teaching Assistant, Research Associate, Undergrad Research Assistant
Projects: - Senior researcher for multi-disciplinary research lab on microelectronics device modeling and thermal analysis
- Consulted to or performed research on behalf of companies such as IBM, DEC, Nortel, Thomson CSF, GEC, and Westinghouse on bipolar transistor modeling and cooling of high power bipolar and CMOS transistors and circuits
- Tutored for numerous undergraduate courses

May. 1980 – Apr. 1981 - Wabush Mines

Location: Sept-Iles, Canada
Position Held: Engineer
Projects: - Designed numerous facilities and machinery "fixes" in an iron ore mining operation located in Labrador and Northern Quebec

Summer 1979 - Chalk River Nuclear Laboratories

Location: Chalk River, Canada
Position Held: Technician
Tasks: - Decontaminated radioactive waste, trained for reactor meltdown

Summer/Fall 1978 - McDonald's Restaurant

Location: Pembroke, Canada
Position Held: Associate
Tasks: - Flipped burgers, made fries, took orders, cleaned everything

1977 – 1979 - Canadian Armed Forces Army Cadet Program

Location: CFB Petawawa, Canada
Position Held: Infantry Sergeant
Tasks: - completed military basic training, received training on infantry small unit tactics to counter Soviet ground invasion forces

Detailed University Education Background:

Ph.D., Feb 1988, University of Waterloo, Waterloo, Canada

Department: Joint Electrical and Mechanical Engineering
Thesis Title: "Thermal and Electrical Modeling of Bipolar Transistors"
Supervisors: Prof. David J. Roulston (EE) and Prof. M. Michael Yovanovich (ME)

Research Topic: - Developed novel analytical techniques for predicting the performance of bipolar semiconductor devices in multiple applications such as power, RF or high speed data communications
- Key advantage was computational efficiency to enable unprecedented analysis of combined thermal and electrical effects to optimize performance of leading-edge bipolar transistors and circuits
- Foundations for research came from novel application of classical mathematic techniques dating back as far as Euler combined with the application of numerical advances made for fluid mechanics to the drift-diffusion equations governing semiconductor devices

Coursework: Advanced Topics in Semiconductor Device Physics and Circuits
Computational Fluid Mechanics and Convective Heat Transfer
Advanced Topics in Heat Conduction
Graduate Level Applied Mathematics

M.A.Sc., May 1985, University of Waterloo, Waterloo, Canada

Department: Mechanical Engineering
Thesis Title: "Temperature Distributions in Contacting Electrical Conductors"
Supervisor: Prof. M. Michael Yovanovich (ME)

Research Topic: - Solved the classic coupled problem of determining the temperatures of rough surfaces that conduct electricity with self-heating due electrical constriction resistance by developing novel approximate analytical numerical techniques based on images
- Practical applications for determining contact pressures in any metal to metal electrical contact

Coursework: Semiconductor Device Physics, Fabrication and Circuits
Electromagnetics, RF Propagation and Field Theory
Fluid Mechanics, Conductive, Convective and Radiative Heat Transfer
Advanced Topics in Numerical Analysis
Theory of Models

B.A.Sc., May 1984, University of Waterloo, Department of Mechanical Engineering.

- 5-year undergraduate program that alternates 4-month coursework semesters with 4-month "co-op" work terms in industry with engineering project work requirements.
- Studied all basic ME subjects including heat transfer, fluid mechanics, machine design, stress analysis, automation, manufacturing techniques, and basic electrical circuit design

Academic Achievements:

1989 IEEE “Best Paper” Award for an IEEE Journal publication, this paper was based upon my Ph.D. thesis work.

1988 University of Waterloo, Faculty of Engineering Award for Outstanding Ph.D. work and Faculty sole nominee for University-wide Gold Medal Award.

1985 University of Waterloo, Gold Medal Award for Outstanding Master’s Degree work on a University-wide basis.

1984 University of Waterloo, Dept. of Mechanical Engineering, Graduated 3rd out of 200.

1981 University of Waterloo, Faculty of Engineering, Award for Outstanding Co-Op Work Term Report.

1979 Valedictorian and graduated 1st out of 200 for High School in Pembroke, Ontario.

1979 Descartes High School Math contest winner for Eastern Ontario Region.

Selected Personal Highlights:

2010 Recipient of the University of Waterloo, Faculty of Engineering Alumni Achievement Award for technical innovations in and contributions to the development of wireless Internet and cellular communications technology products over the past 25 years

US Citizen since Feb 2006, US Permanent Resident since 1989, US H1 Visa 1986-1989.

Born in Fredericton, New Brunswick, Canada on Dec. 30, 1961.

Member of the IEEE since 1988. Co-chair of the RFIC Subcommittee for the IEEE BCTM Conference from 1996 to 1998.

Past Owner and operator with wife Eva of a working 200-cow cattle ranch in rural Wyoming.

Past Chairman (2003-2014), Hyattville Community Center Association.

Past Board Member, Hyattville Water Company.

Past Director, Youth Ice Hockey Program, Big Horn County in Wyoming.

Former provincial (“State”) high school champion in the pole vault.

Avid outdoorsman, water skier, hockey player and snow skier.

Selected Publications:

Lea, A., Negus, K., et al., "Spectrum Options for Wireless Backhaul of Small Cells", 8th European Conference on Antennas and Propagation, The Hague, Netherlands, Apr. 6-11, 2014.

Negus, K.J., "Spectrum Options for Wireless Backhaul of Small Cells", Small Cell Forum, Dallas, TX, December 4, 2013.

Negus, K.J. and Petrick, A., "History of Wireless Local Area Networks (WLANs) in the Unlicensed Bands", George Mason University Law School Conference, Information Economy Project, Arlington, VA., April 4, 2008.

Primary co-author of the HomeRF 2.01 Technical Specification (526 pages), July 2002, published by the HomeRF Working Group.

Negus, K.J. and Swan, B., "HomeRF: Design-in Module Practices", Intel Developer Forum, San Jose, CA, Feb. 2001.

Negus, K.J., "Designing with HomeRF Technology", Intel Developer Forum, San Jose, CA, Aug. 2000.

Negus, K.J., Stephens, A., and Lansford, J., "HomeRF: Wireless Networking for the Connected Home", IEEE Journal of Personal Communications, Vol. 7, No. 1, Feb. 2000, pp. 20-27.

Negus, K.J., Waters, J., et. al., "HomeRF and SWAP: Wireless Networking for the Connected Home", ACM Mobile Computing and Comms Review, Vol. 2, No. 4, Oct. 1998, pp. 28-37.

Morkner, H., Frank, M. and Negus, K., "A Novel Integrated Microwave Bias Network for Low-Cost Multistage Amplifiers", IEEE MTT-S Symposium Digest, Vol. 1, Jun. 1997, pp. 9-12.

Jansen, B., Negus, K., and Lee, D., "Silicon Bipolar VCO Family for 1.1 to 2.2 GHz with Fully-Integrated Tank and Tuning Circuits", 44th IEEE ISSCC Digest of Technical Papers, Feb. 1997, pp. 392-393.

Hutchinson, C., Frank, M., and Negus, K., "Silicon Bipolar 12 GHz Downconverter for Satellite Receivers", Proc. 1995 IEEE Bipolar Circuits and Technology Meeting, Oct. 1995, pp. 198-201.

Negus, K., et. al., "Highly-Integrated Transmitter RFIC with Monolithic Narrowband Tuning for Digital Cellular Handsets", 41st IEEE ISSCC Digest of Technical Papers, Feb. 1994, pp. 38-39.

Negus, K. and Millicker, D., "RFICs for Reduced Size, Cost and Power Consumption in Handheld Wireless Transceivers", Proceedings of the IEEE 2nd International Conference on Universal Personal Communications, Oct. 1993, pp. 919-925.

Negus, K.J., et. al., "3.3V GPS Receiver MMIC Implemented on a Mixed-Signal, Silicon Bipolar Array", IEEE MTT-S Symposium Digest, Vol. 2, Jun. 1992, pp. 1071-1074.

Negus, K., et. al., "Silicon Bipolar Mixed-Signal Parameterized-Cell Array for Wireless Applications to 4 GHz", 39th IEEE ISSCC Digest of Technical Papers, Feb. 1992, pp. 230-231.

- Negus, K. J., "Multi-Gbits/s Silicon Bipolar Multiplexer and Demultiplexer with Interleaved Architectures", Proc. 1991 IEEE Bipolar Circuits and Technology Meeting, Oct. 1991, pp. 35-38.
- Negus, K.J. and Wholey, J.N., "Multifunction Silicon MMICs for Frequency Conversion Applications", IEEE Transactions on Microwave Theory and Techniques, Vol. 38, No. 9, Sep. 1990, pp. 1191-1198.
- Negus, K.J. and Wholey, J.N., "Implementation of RF/Microwave Receiver Components on a Semi-Custom Silicon Bipolar Array", IEEE MTT-S Symposium Digest, Jun. 1990, pp. 67-72.
- Negus, K.J., Franklin, R.W. and Yovanovich, M.M., "Thermal Modeling and Experimental Techniques for Microwave Bipolar Devices", IEEE Transactions on Components, Hybrids and Manufacturing Technology, Vol. 12, No. 4, Dec. 1989, pp. 680-689.
- this paper won the IEEE award for Best Journal Paper in 1989
- Negus, K.J. and Roulston, D.J., "Simplified Modeling of Delays in the Emitter-Base Junction", Solid State Electronics, Vol. 31, No. 9, Sep. 1988, pp. 1464-1466.
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