

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Roy Shkedi Attorney Docket No.: 58717-0006IP1
U.S. Patent No.: 8,677,398
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Title: SYSTEMS AND METHODS FOR TAKING ACTION WITH RE-
SPECT TO ONE NETWORK-CONNECTED DEVICE BASED
ON ACTIVITY ON ANOTHER DEVICE CONNECTED TO THE
SAME NETWORK

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES

PATENT NO. 8,677,398 PURSUANT TO 35 U.S.C. §§ 311–319,

37 C.F.R. § 42

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EXHIBITS

- EX1001 U.S. Patent No. 8,677,398 to Shkedi (“the ’398 Patent”)
- EX1002 Excerpts from the Prosecution History of the ’398 Patent (“the Prosecution History”)
- EX1003 Declaration and Curriculum Vitae of Dr. Michael Mitzenmacher
- EX1004 U.S. Pub. No. 2002/0123928 to Charles A. Eldering *et al.* (“Eldering”)
- EX1005 U.S. Pub. No. 2006/0265507 to Jaz Banga *et al.* (“Banga”)
- EX1006 U.S. Pub. No. 2007/0244750 to Grannan *et al.* (“Grannan”)
- EX1007 Internet Engineering Task Force (IETF) Request for Comment (RFC) 2460, *Internet Protocol, Version 6 (IPv6) Specification* (Dec. 1998)
- EX1008 IETF RFC 3177, *IAB/IESG Recommendations on IPv6 Address Allocations to Sites* (Sep. 2001)
- EX1009 IETF RFC 3513, *Internet Protocol Version 6 (IPv6) Addressing Architecture* (Apr. 2003)
- EX1010 IETF RFC 3587, *IPv6 Global Unicast Address Format* (Aug. 2003)
- EX1011 Internet Draft v08 of IETF RFC 2462, *IPv6 Stateless Address Autoconfiguration*, draft-ietf-ipv6-rfc2462bis-08.txt (May 12, 2005)
- EX1012 U.S. Pub. No. 2008/0133327 to Shah Ullah
- EX1013 U.S. Pub. No. 2007/0038568 to Todd Greene *et al.*
- EX1014 U.S. Pub. No. 2008/0201733 to Kent Ertugrul *et al.*
- EX1015 U.S. Patent No. 6,298,348 to Charles A. Eldering
- EX1016 U.S. Patent No. 6,457,010 to Charles A. Eldering and M. Lamine Sylla

- EX1017 Wayback Capture of P. Hoffman and S. Harris, “The Tao of IETF: A Novice's Guide to the Internet Engineering Task Force,” available at <https://web.archive.org/web/20070214120950/http://www.ietf.org:80/tao.html> (captured on Feb. 14, 2007)
- EX1018 Wayback Capture of RFC Editor available at <https://web.archive.org/web/20070217105548/http://www.rfc-editor.org:80/rfc.html> (captured on Feb. 17, 2007)
- EX1019 IETF RFC 6177, *IPv6 Address Assignment to End Sites* (Mar. 2011)

CLAIM LISTING

Element Label	Claim Element
[1.pre]	A method implemented using a programmed hardware computer system, the method comprising:
[1.a]	receiving, at the computer system, an electronic identifier of a first device;
[1.b.i]	with the computer system, automatically generating and storing electronic indicia of an association between the first device identifier and an electronic identifier of a second device based on automatically recognizing that each of the first and second devices was connected, independently of the other, to a common local area network,
[1.b.ii]	wherein the computer system is connected to the local area network through the Internet but is not in the local area network; and
[1.c]	with the computer system, based on the electronic indicia of the association between the first and second device identifiers, automatically sending an electronic transmission that causes another programmed hardware computer system to take an action, based on first electronic profile data associated with the first device identifier, with respect to the second device, which is indicated at the time of the action by the second device identifier.
[2]	The method of claim 1 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.
[3]	The method of claim 2 wherein the common IP address comprises an IP address, or portion thereof, of a modem or router by which the first and second devices are connected to the local area network.
[4]	The method of claim 2 wherein the electronic indicia of the electronic association include or reference indicia of the common IP address or portion thereof.

[6]	The method of claim 1 wherein the first device is an online user interface device and the second user interface device is a television set-top box.
[7]	The method of claim 1 wherein the first device comprises a mobile device that is connected to the local area network only intermittently.
[8]	The method of claim 1 wherein the action comprises automatically causing, with the computer system, a selected advertisement to be directed to the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data.
[9]	The method of claim 1 wherein the electronic indicia of the electronic association comprise one or more electronic records in a database accessible to the computer system.
[10]	The method of claim 1 wherein the electronic indicia of the electronic association comprise one or more tags or cookies readable by the computer system that are stored on the first device or second device.
[11]	The method of claim 10 further comprising, using the computer system, automatically storing, in a memory in the first device or second device, the one or more tags or cookies.
[12]	The method of claim 1 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.
[13.pre]	A method implemented using a programmed hardware computer system, the method comprising:
[13.a]	(a) based on first electronic profile data associated with an electronic identifier of a first device, automatically causing, with the computer system, an action to be taken with respect to a second device that is indicated at the time of the action by an electronic identifier electronically associated with the first device identifier;
[13.b]	(b) wherein the electronic association between the first and second device identifiers is based on connection, before the action, of each of the first and second devices, independently of the other, to a common local area network, wherein the computer system is connected to the local area

	network through the Internet but is not in the local area network.
[14.a]	The method of claim 13 further comprising: (i) receiving, at the computer system, the first device identifier; and
[14.b]	(ii) with the computer system, automatically generating and storing electronic indicia of the association between the first and second device identifiers based on automatically recognizing that, before the action, each of the first and second devices was connected, independently of the other, to the common local area network.
[15]	The method of claim 13 wherein the first device is connected to the local area network only intermittently.
[16]	The method of claim 13 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.
[17]	The method of claim 16 wherein the common IP address comprises an IP address, or portion thereof, of a modem or router by which the first and second devices are connected to the local area network.
[18]	The method of claim 16 wherein the electronic indicia of the electronic association include or reference indicia of the common IP address or portion thereof.
[20]	The method of claim 13 wherein the first device is an online user interface device and the second user interface device is a television set-top box.
[21]	The method of claim 13 wherein the first device comprises a mobile device that is connected to the local area network only intermittently.
[22]	The method of claim 13 wherein the action comprises automatically causing, with the computer system, a selected advertisement to be directed to the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data.
[23]	The method of claim 13 wherein the electronic indicia of the electronic association comprise one or more electronic records in a database accessible to the computer system.

[24]	The method of claim 13 wherein the electronic indicia of the electronic association comprise one or more tags or cookies readable by the computer system that are stored on the first device or second device.
[25]	The method of claim 24 further comprising, using the computer system, automatically storing, in a memory in the first device or second device, the one or more tags or cookies.
[26]	The method of claim 13 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.
[27.pre]	A system comprising one or more computers, wherein the one or more computers are programmed and connected:
[27.a]	(a) to receive at one or more of the computers an electronic identifier of a first device;
[27.b.i]	(b) to generate and store automatically electronic indicia of an association between the first device identifier and an electronic identifier of a second device based on automatically recognizing that each of the first and second devices was connected, independently of the other, to a common local area network,
[27.b.ii]	wherein the computer system is connected to the local area network through the Internet but is not in the local area network; and
[27.c]	(c) based on the electronic indicia of the association between the first and second device identifiers, to send automatically an electronic transmission that causes another programmed hardware computer system to take an action, based on first electronic profile data associated with the first device identifier, with respect to the second device, which is indicated at the time of the action by the second device identifier.
[28]	The system of claim 27 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.

[29]	The system of claim 27 wherein the action comprises automatically causing a selected advertisement to be directed to the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data.
[30]	The system of claim 27 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.
[31.pre]	A system comprising one or more computers, wherein the one or more computers are programmed and connected:
[31.a]	(a) based on first electronic profile data associated with an electronic identifier of a first device, to cause automatically an action to be taken with respect to a second device that is indicated at the time of the action by an electronic identifier electronically associated with the first device identifier;
[31.b]	(b) wherein the electronic association between the first and second device identifiers is based on connection, before the action, of each of the first and second devices, independently of the other, to a common local area network, wherein the computer system is connected to the local area network through the Internet but is not in the local area network.
[32.a]	The system of claim 31 wherein the one or more computers are further programmed and connected: (i) to receive at one or more of the computers the first device identifier; and
[32.b]	(ii) to generate and store automatically electronic indicia of the association between the first and second device identifiers based on automatically recognizing that, before the action, each of the first and second devices was connected, independently of the other, to the common local area network.
[33]	The system of claim 31 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.
[34]	The system of claim 31 wherein the action comprises automatically causing a selected advertisement to be directed to

	the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data.
[35]	The system of claim 31 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.
[36.pre]	An article comprising a non-transitory tangible medium encoding computer-readable instructions that, when applied to one or more computers, instruct the one or more computers to perform a method comprising:
[36.a]	(a) receiving at one or more of the computers an electronic identifier of a first device;
[36.b.i]	(b) automatically generating and storing electronic indicia of an association between the first device identifier and an electronic identifier of a second device based on automatically recognizing that each of the first and second devices was connected, independently of the other, to a common local area network,
[36.b.ii]	wherein the computer system is connected to the local area network through the Internet but is not in the local area network; and
[36.c]	(c) based on the electronic indicia of the association between the first and second device identifiers, automatically sending an electronic transmission that causes another programmed hardware computer system to take an action, based on first electronic profile data associated with the first device identifier, with respect to the second device, which is indicated at the time of the action by the second device identifier.
[37]	The medium of claim 36 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.
[38]	The medium of claim 36 wherein the action comprises automatically causing a selected advertisement to be directed to the second device, wherein the advertisement is selected

	based at least in part on at least a portion of the first electronic profile data.
[39]	The medium of claim 36 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.
[40.pre]	An article comprising a non-transitory tangible medium encoding computer-readable instructions that, when applied to one or more computers, instruct the one or more computers to perform a method comprising:
[40.a]	(a) based on first electronic profile data associated with an electronic identifier of a first device, automatically causing an action to be taken with respect to a second device that is indicated at the time of the action by an electronic identifier electronically associated with the first device identifier;
[40.b]	(b) wherein the electronic association between the first and second device identifiers is based on connection, before the action, of each of the first and second devices, independently of the other, to a common local area network, wherein the computer system is connected to the local area network through the Internet but is not in the local area network.
[41.a]	The medium of claim 40 wherein the method that the one or more computers are instructed to perform using the encoded instructions further comprises: (i) receiving at one or more of the computers the first device identifier; and
[41.b]	(ii) automatically generating and storing electronic indicia of the association between the first and second device identifiers based on automatically recognizing that, before the action, each of the first and second devices was connected, independently of the other, to the common local area network.
[42]	The medium of claim 40 wherein the electronic association is recognized based on a common IP address, or portion thereof, wherein network traffic is routed via the common IP address for each of the first and second devices when each is connected to the local area network.
[43]	The medium of claim 40 wherein the action comprises automatically causing, with the computer system, a selected

	advertisement to be directed to the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data.
[44]	The medium of claim 40 wherein the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device.

LiveIntent, Inc. (“Petitioner”) petitions for *Inter Partes* Review (“IPR”) of claims 1-4, 6-18, 20-44 (“the Challenged Claims”) of U.S. Patent No. 8,677,398 (“the ’398 Patent”).

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioner certifies that the ’398 Patent is available for IPR. This petition is being filed within one year of service of the complaint against Petitioner. Petitioner is not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

B. Challenge and Relief Requested

Petitioner requests an IPR of the Challenged Claims on the following grounds. Dr. Mitzenmacher provides supporting testimony in his Declaration. *See generally* EX1003.

Ground	Claim(s)	35 U.S.C. §103
1	1-4, 6-18, 20-44	Eldering, Knowledge of a POSITA re IPv6 ¹ , and Banga

¹ Dr. Mizenmacher’s testimony regarding a POSITA’s knowledge of IPv6 is corroborated by publicly accessible RFCs, which are each printed publication prior art for the reasons he describes. *See* EX1003, [0029]-[0030]. However, regardless of

Reference	Filing Date	Publication Date
Eldering	8/10/2001	9/5/2002
Banga	05/12/2006	11/23/2006
RFC 2460	N/A	12/1998
RFC 2462 Internet Draft v08	N/A	5/2005
RFC 3177	N/A	9/2001
RFC 3513	N/A	4/2003
RFC 3587	N/A	8/2003

Each of RFC 2460 (EX1007), RFC 3177 (EX1008), RFC 3513 (EX1009), RFC 3587 (EX1010), and Internet Draft v08 of RFC2462 are each authentic copies of publicly accessible documents as of the earliest proclaimed priority date of the '398 Patent, 04/17/07 ("Critical Date"). *See* EX1003, [29]-[30]. On or near the date listed on each document and well before the Critical Date, the IETF would

the availability of the RFCs themselves under §311(b), reliance on the knowledge of a POSITA established by Dr. Mizenmacher is "permissible" in this IPR. *Shock-wave Medical, Inc. v. Cardiovascular Systems, Inc.*, No. 2023-1864, slip op. at 6-10 (Fed. Cir. July 14, 2025).

have advised an open mailing list, which included many POSITAs, of the publication of these documents and their availability on the well-known website <http://www.rfc-editor.org>, which indexed the documents by keyword and other criteria. *See id.* Further, by the Critical Date, a POSITA would have also been able to keyword search the text of these documents on Google. EX1003, [30].

II. THE '398 PATENT

A. Brief Description

The '398 Patent discloses a method for delivering targeted television advertisements based on online behavior. *See* Ex. 1001, Abstract.

Figure 7 of the '398 Patent is reproduced below:

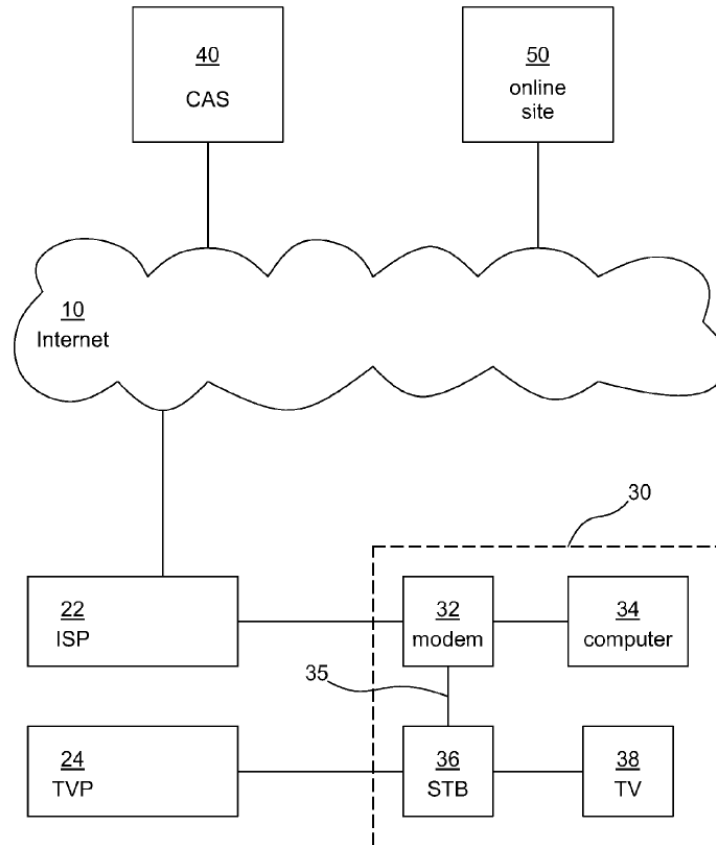


FIG. 7

Figure 7 depicts central ad server (CAS) 40 and online site 50 connected to Internet 10; modem 32 connected to Internet service provider (ISP) 22, computer 34 and set-top box (STB) 36; and STB 36 connected to TV 38 and television provider (TVP) 24. *See Ex. 1001, 12:47–13:21.* An identifier can be assigned to STB 36, such as an equipment serial number, a device MAC address, a username, a pseudonym, a tag, or other identifying code or data element, and may include the IP address STB 36 is using when in contact with CAS 40. *See id.* at 15:1–14.

Once a STB is confirmed to have been using a certain IP address at a certain date and time (for example by having a uniquely

tagged STB consecutively communicate with the CAS using the same IP address . . .), the CAS database can be searched to find all computers, mobile devices, and other STBs that used the same IP address at the same date and time, and those will be assumed to be devices that are part of the same household and same LAN. Then, an association or link is created among the devices, by linking the device identifiers or tags with the STB's identifier in the CAS database

Ex. 1001, 18:24–50.

B. Level of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA”) relating to the subject matter of the ’398 Patent as of April 17, 2007 would have possessed at least a combination of (1) at least a bachelor’s degree in computer science, computer engineering, electrical engineering, or a related field, and (2) at least two years of industry experience with e-commerce computing systems, including systems that support targeted advertising. EX1003, [67]. More education could substitute for work experience, and *vice versa*. *Id.*

C. Claim Construction

Petitioner submits that no formal claim constructions are necessary because “claim terms need only be construed to the extent necessary to resolve the controversy.” *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). Petitioner reserves the right to respond to any constructions offered by Pa-

tent Owner or adopted by the Board. Petitioner is not conceding that each challenged claim satisfies all statutory requirements, nor waiving arguments/grounds that cannot be raised in this proceeding.

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: The combination of Eldering, Banga, and the Knowledge of a POSITA re IPv6 as Evidenced by At Least RFCs 2460, 3177, 3513, and 3587 renders claims 1-4, 6-18, 20-44 obvious

1. Eldering

Eldering is analogous to and in the same field as the '398 Patent, as both the '398 Patent and Eldering relate to internet profiling and targeting advertisements *See, e.g.*, EX1001, abstract; EX1004, abstract; EX1003, [66]. More specifically, Eldering describes “a system, method and apparatus for targeting advertisements (ads) to subscribers.” EX1004, [0024]. “The ads are targeted to subscribers by correlating subscriber profiles with ad profiles.” EX1004, [0024]. “The subscriber profiles identify characteristics and/or traits associated with the subscriber and the ad profiles identify characteristics and/or traits about an intended target market for the ad.” EX1004, [0024].

As shown in FIG. 5 (reproduced below), the system described by Eldering comprises two major parts: the Secure Profiling Server (SPS) and the Secure Correlation Server (SCS). EX1004, [0085]; EX1003, [14].

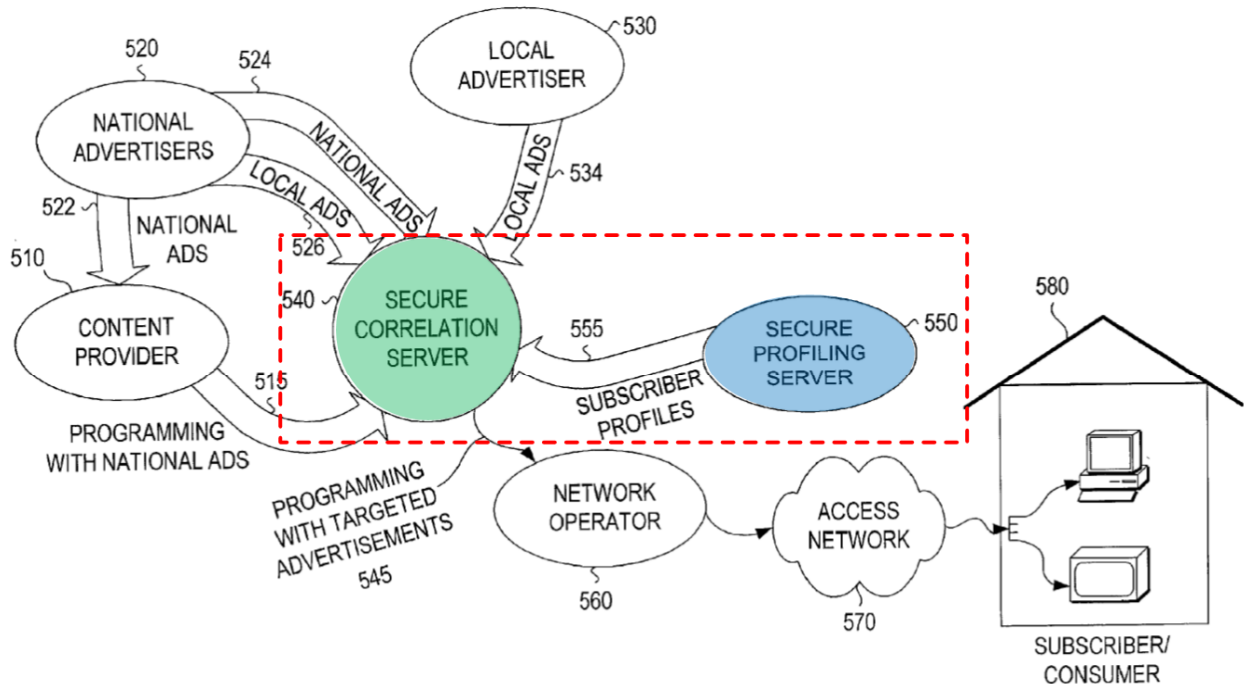


FIG. 5

EX1004, FIG. 5 (annotated)

“The subscriber profiles are generated by a Secure Profiling Server (SPS).” EX1004, [0025]. “[T]he SPS 550 generates profiles of the [] subscribers 580 that are used to form groups and thus correlate ads.” EX1004, [0087]. “According to one embodiment, the profiles are formed in advance and forwarded to the SCS 540 where they are matched with ads.” EX10014, [0088]. Eldering describes several types of profiles that might be generated by the SPS and utilized by the SCS to correlate ads. EX1003, [19]; *see* EX1004, [0101]-[0105].

For example, Eldering describes a “session profile,” which is “a profile, such as a viewing characteristics profile, that is associated with a single viewing session, wherein the initiation and completion of a viewing session can be determined in

various manners.” EX1004, [0104]. The “viewing characteristics” for a “session” may include TV viewing characteristics (*e.g.*, characteristics associated with a user interacting with a set-top box while watching cable television) or Internet viewing characteristics (*e.g.*, characteristics associated with a user interacting with a computer while viewing content on the Internet, such as “sites visited, click throughs, bookmarks and other commands applicable to Internet surfing”). EX1003, [20]; *see* EX1004, [0090]-[0092]. Eldering also describes a “signature profile,” which is a “compilation of viewing sessions.” EX1004, [0105]; *see also id.* [0101], [0109].

The signature profile and the session profiles that constitute and/or form the signature profile are for a “subscriber,” which Eldering teaches may be an individual (*i.e.*, “a single subscriber”) or a household with multiple individuals (*i.e.*, “a household of subscribers”). EX1003, [21]; *see* EX1004, [0101]-[0102] (“‘subscriber’ -a single subscriber, a household of subscribers, or some combination of subscribers”), [0156] (“According to one embodiment, it is possible for an advertiser to determine the applicability of an ad to a subscriber (individual/household or group”); EX1016, 4:18-24, 4:52-61 (describing household profiles that “average characteristics of a household of multiple subscribers” over a number of sessions). And Eldering teaches that a household may include multiple types of devices, all of which may be monitored to collect session data. *See* EX1004, [0084]

“As should be obvious to one of ordinary skill in the art, there are numerous characteristics by which subscribers can be grouped, including but not limited to geographic, . . . viewing habits, . . . [and] Internet surfing habits. . . . These characteristics can be gathered from a multitude of different sources, may be generated within, or a combination thereof”); [0090] (teaching that a subscriber’s viewing characteristics may include “data from a TV viewing characteristics database 612 and an Internet viewing characteristics database 614”); [0092]; FIG. 5 (showing multiple devices within a household). From these teachings a POSITA would have understood or found obvious that a signature profile may be a collection of session profiles for all the devices and people within a household. EX1003, [21].

Furthermore, Eldering describes that additional information about “collection of subscriber selection data” is provided in U.S. Appl. No. 09/205,653 (U.S. Pat. No. 6,457,010), which Eldering incorporates by reference in its entirety. EX1004, [0109]; EX1016, 1. Eldering’s ’010 Patent describes an example embodiment in which the SCS system “can be realized as part of a client-server architecture.” EX1016, 14:52-55. For example, “residence 1800 contains a personal computer (PC) 1820 as well as the combination of a television 1810 and a set-top 1808, which can request and receive programming.” EX1016, 14:55-59. This equipment forms a “client side of the network as defined herein.” EX1016, 14:59-61. “The server side receives the requested programming which is displayed on PC 1820 or

television 1810 according to which device made the request.” EX1016, 15:7-10.

All of these requests, regardless of the device from which they originate, are recorded by the SCS system for use in creating a household profile. *See* EX1016, 14:52-15:19; EX1003, [22]. Indeed, as of the Critical Date, it was known in similar systems to create household profiles that track all of the devices associated within a given household. *See, e.g.*, EX1006, [0054], [0058], [0080] (describing that the system includes “an Internet profiling database 204 which supplies the surfing and content consumption history for the subscriber across multiple access devices”), [0086]; EX1003, [22]. Accordingly, a POSITA would have understood or at least found it obvious that Eldering’s household signature profile would have included session data for all of the members of the household across all of the household’s devices. EX1003, [22].

Eldering described that a “subscriber” may be a “household” (*see* EX1004, [0101]-[0102]), and taught that, in order to compile a signature profile, the viewing sessions must be “determined to be associated with one another.” EX1004, [0105]. From this, a POSITA would have understood or at least found obvious that, in order to create a signature profile for a household, Eldering’s system would have associated the session profiles created with respect to each of the devices within the household. EX1003, [23]. Where the SPS is located locally (*e.g.*, within a household’s set-top box), this association would be straightforward, as all data would be

collected within the household LAN. *See* EX1004, [0125]; EX1003, [23]. However, Eldering describes that session data collection and profile creation may be performed at “a third party location connected to the access network,” in which case a POSITA would have understood or at least found obvious that the session data would be received from multiple households and should be differentiated. *See* EX1004, [0125]; EX1003, [23]. For those embodiments where profiles are generated and managed at a third party location, as Eldering’s SPS receives session profiles for a given device, a POSITA would have understood or at least found obvious that the SPS would determine what household—and thus which signature profile—the device is associated with. EX1003, [25]. However, Eldering does not require or otherwise limit a methodology for associating each device with its respective household. EX1003, [25].

Furthermore, Eldering describes that “each subscriber will not be identified by personal information, such as name, but instead will be identified by some unique identification, which may include but is not limited to customer number, media access control (MAC) ID, and Internet protocol (IP) address.” EX1004, [0091]². Thus, Eldering describes that, in order to maintain privacy, the subscriber

² A POSITA would have understood that the clause “which may include but is not limited to” means the “and” here isn’t a conjunction — these are all things that can

profiles are identified, for example, by a MAC ID and/or IP address, which function as identifiers for a subscriber's device from which session data is obtained. EX1003, [26].

Accordingly, Eldering teaches a need to associate devices with a household in order to create a household signature profile, and describes that the session data obtained from the household's devices may be identified by a MAC ID and/or IP address of the device. EX1003, [27]; *see* EX1004, [0091], [0101]-[0105].

2. A POSITA's Knowledge of IPv6

As of the Critical Date, a POSITA would have known that at least one way of associating a device with a household was through the use of an Internet Protocol version 6 (IPv6) address, which was a type of IP address that provided a globally unique identifier for a device and that included information about the network on which the device was located and the MAC address for the device. EX1003, [28]. IP addresses were used by the '398 Patent, and therefore a POSITA's

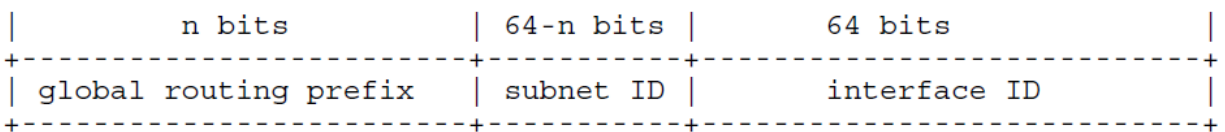
but don't need to be included (individually). EX1003, [26], n.1. This is further evidenced by the overall teachings of Eldering that subscriber data may be identified with any one or more of these unique identifiers. *Id.* For example, Eldering describes a case in which "each subscriber is only identified by MAC ID." EX1004, [0116].

knowledge of them would have been analogous and in the same field of art. *See* EX1001, abstract; EX1007, 2; EX1003, [66].

IPv6 was “a new version of the Internet Protocol, designed as the successor to IP version 4 (IPv4).” EX1007, 2. “IPv6 increases the IP address size from 32 bits to 128 bits, to support more levels of addressing hierarchy, a much greater number of addressable nodes, and simpler auto-configuration of addresses.”

EX1007, 2. “The IPv6 address, as currently defined, consists of 64 bits of ‘network number’ and 64 bits of ‘host number’.” EX1008, 2. “The requirements for IPv6 agreed to in 1993 included a plan to be able to address approximately 2^{40} networks and 2^{50} hosts; the 64/64 split effectively accomplishes this,” by providing for up to 2^{64} networks and 2^{64} hosts. EX1008, 2; EX1003, [31].

In practice, a global unicast address for a node (*e.g.*, a user’s device on a network) using the 64/64 split is structured as follows:



EX1010, 2. The global “routing prefix is a value assigned to identify a site (a cluster of subnets/links), the subnet ID is an identifier of a subnet within the site, and the interface ID is a modified EUI-64 format.” EX1010, 3.

For household internet subscribers, the global routing prefix is a unique identification for the subscriber’s local network in their home. EX1003, [33]. The

Internet Architecture Board (IAB) and the Internet Engineering Steering Group (IESG) of the IETF “recommended that the address block given to a single edge network which may be recursively sub-netted be a 48-bit prefix.” EX1008, 3. In other words, each global prefix is 48-bits, 45 of which are variable in which to identify edge networks. EX1008, 3, 5. These edge networks range from “large enterprises” to “home network subscribers.” EX1008, 3. The IETF’s “expectation [was] that personal, home networks will become the norm.” EX1008, 3. Thus, when a household signs up for Internet connectivity with an ISP, the IETF recommended that ISP’s assign that “home network subscriber” and its local network (*e.g.*, devices sharing a connection to an ISP router and any subnets employed by the household) a globally unique 48-bit routing prefix³. EX1003, [33]; EX1008, 3.

Any device that connects to that local household network can be assigned a global unicast address for communication on the Internet that is, in part, a combination of (1) the 48-bit global routing prefix for that home network and (2) a modified EUI-64 format interface ID for the device. EX1008, 2-3; EX1010, 2-3.

³ The standard size of the globally unique routing prefix is set by the ISP and may differ from the IETF recommendation (*e.g.*, some ISPs use 56-bit prefixes for households). *See, e.g.*, EX1019, 4-5. However, the principal is the same regardless of the size of the prefix. EX1003, [34].

“Modified EUI-64 format based Interface identifiers may have global scope when derived from a global token (e.g., IEEE 802 48-bit MAC or IEEE EUI-64 identifiers [EUI64]).” EX1009, 8. In other words, when using modified EUI-64 format, a device’s interface ID is a transform of its unique 48-bit MAC address such that its IPv6 address includes the device’s MAC address. EX1003, [35]; *see, e.g.*, EX1012, [0136] (“In IPv6, the possibility arises, that since the IP address includes the MAC address, that the IP address may become an easier and quicker way to derive a device-specific identification”); EX1009, 8-9.

Thus, when a device, such as a computer or set-top box, is connected to the Internet through an ISP subscriber’s household router, the device may be assigned an IPv6 address, which includes information to uniquely identify the local household network through which the device accesses the Internet (*i.e.*, the global routing prefix) and information indicating the device’s unique MAC address (*i.e.*, the interface ID). EX1003, [36].

3. Banga

In addition to tracking devices based on their IP addresses to build profiles, it was well known to combine the IP address with a persistent cookie stored on the device that can be used to associate the device with one or more profiles. EX1003, [48]. For example, like Elderling, Banga describes a system “utilizing a user profile containing user preferences” that “can identify media or media types which are

most relevant to the user.” EX1005, [0021]. In Banga’s system, a user interacts with content (*e.g.* a website) using a network access device (*e.g.*, a “desktop[], laptop[], personal digital assistant[], [or] cellular telephone[.]”) that is connected to the Internet by a service provider (*e.g.*, an ISP). EX1005, [0022]-[0027]. “[T]he service provider 120 assigns an external IP address to each network access device 110 seeking access to the communications network 130.” EX1005, [0026].

Banga is analogous to and in the same field as the ’398 Patent, as both the ’398 Patent and Banga relate to internet profiling and targeting advertisements *See, e.g.*, EX1001, abstract; EX1005, abstract; EX1003, [66]. More specifically, Banga describes a client relationship (CR) server 150 that “is configured to identify any number of network access devices 110 seeking access to the network 130,” and to generate profiles. EX1005, [0028]. “Each user profile identifies a user (indirectly via the network access device 110 the user is using) through the current IP address and device identifier (or other information) associated with the network access device 110.” EX1005, [0041]. The IP address of a network access device may then be used to retrieve the user profile associated with the network access device and utilize the profile to serve directed content (*e.g.*, an advertisement). EX1005, [0049], [0056]-[0060], [0072].

Though Banga’s system does not require the placement of cookies on a user’s network access device to identify the device, Banga recognized that,

“[b]ecause most of the current advertisement industry is based on using cookies, the use of a cookie and/or a device identifier will assist in transitioning the advertisement industry away from the current cookie-only system.” EX1005, [0031].

“As a result, each network access device 110 may be identified by a hybrid cookie/device identifier combination.” EX1005, [0031]. Indeed, Banga recognizes that different IP addresses may be assigned to a device by different access points through which a user may connect to the Internet (*e.g.*, a router in a coffee shop or a hotspot in the park). EX1005, [0034]-[0035]. A POSITA would have understood and found obvious that a cookie can be used to store these various IP addresses to better track and authenticate the user over time. *See, e.g.*, EX1013, [0094]-[0095], [0099]-[0104]; EX1014, [0120]-[0121], [0133]; EX1003, [50].

4. The Combination, Reasons to Combine, & Expectation of Success

a) Obviousness of Using IPv6

As discussed in Section III.A.1, *supra*, a POSITA would have understood or at least found obvious that Eldering’s SPS would have associated devices within a household to create a household signature profile, and that the session data obtained from the household’s devices may be identified by an IP address of the device. EX1003, [37]; *see* EX1004, [0091], [0101]-[0105]. However, Eldering does not require or otherwise limit a methodology for associating each device with its respective household. EX1003, [37]. As of the Critical Date, a POSITA would

have known that at least one way of associating a device with a household was through the use of the global routing prefix portion of an Internet Protocol version 6 (IPv6) address. EX1003, [37]; *see* EX1008, 3; EX1010, 3.

A POSITA would have found it obvious that at least one advantageous way to associate session profiles would have been for Eldering's system to identify those devices being monitored that were using IPv6 addresses, and to identify the session data as part of a particular household LAN with at least the IPv6 address (a subset of IP addresses used at the time of the '398 Patent), consistent with the teachings of Eldering. EX1004, [0091] (teaching that viewing activity data "will be identified by some unique identification, which may include but is not limited to . . . Internet protocol (IP) address"). Indeed, it was known to use IPv6 addresses to identify data and profiles in content targeting systems. EX1003, [38]; *see, e.g.*, EX1012, [0134]-[0137]. A POSITA would have found it obvious that, in at least some cases, the session data of a customer device would have been identified with an IPv6 address of the device, and that Eldering's system would have checked for the use of IPv6 addresses for the devices being monitored for session data in order to associate them with a household signature profile. EX1003, [38]; *see* EX1004, [0105] (describing a signature profile as being "associated with a compilation of viewing sessions that are determined to be associated with one another").

Thus, Eldering provides the why (*i.e.*, building a household signature profile) and IPv6 provides the how (*i.e.*, the global routing prefix portion of each device's IP address). EX1003, [43]. Accordingly, the Eldering-IPv6 combination represents the predictable and expected result of applying, in the context of Eldering's profile-based system, an obvious mechanism for determining the household with which a device is associated, as provided by IPv6. EX1003, [42]. From a POSITA's perspective, integrating the supplemental teachings of IPv6 with Eldering's disclosure would have involved nothing more than applying known solutions to known problems in the field of network-based profiling for targeting advertisements to achieve predictable outcomes. EX1003, [42]. The fundamental aspects of Eldering's disclosure would remain intact, bolstered by the well-known and beneficial teachings of IPv6 to successfully arrive at the '398 patent's claimed invention—at least because Eldering already teaches identifying subscriber data by IP address, and IPv6 was a well-known subtype of IP addresses. EX1003, [42]; *see* EX1004, [0091] (“each subscriber . . . will be identified by some unique identification, which may include . . . Internet protocol (IP) address”).

The following independent reasons also support the Eldering-IPv6 combination.

First, IPv6 provides one example of implementation details that Eldering does not otherwise limit to any specific approach. EX1003, [44]. As discussed

above, Eldering teaches that a “signature profile” is a “profile associated with a compilation of viewing sessions that are determined to be associated with one another.” EX1004, [0105]. However, Eldering does not further limit how this association process occurs and leaves the implementation details to POSITAs.

EX1003, [44]. IPv6 provides one example of implementation details a POSITA would have found obvious to utilize when implementing the association of viewing sessions based on IP address, and would help “future-proof” the system. EX1003, [44]; *see* EX1004, [0091], [0105]; EX1007, 2.

Second, a POSITA would have recognized that associating all devices used in a household in the manner described by Eldering would have allowed for better ad targeting. EX1003, [45]. For example, it was known that “[a]uction-based advertising across multiple screens or access devices based on a correlation or comparison of the advertisement product category with the product interest correlation score for the product/service for a particular subscriber allows advertisers to tightly control and select what degree of advertisement contact should be made with a subscriber . . . and what price contacting that subscriber with an advertisement is worth.” EX1006, [0077]. By tracking all of the devices for a household, the advertisement targeting capabilities were enhanced. EX1003, [45]. In an example scenario:

[D]uring the summer, Anna and her sister have watched a children’s

television show on a particular television channel every afternoon. It is their favorite show. This is reflected in the product interest correlation scores for Anna and her sister and their mom is selected to receive an advertisement in a product category related to the show.

When summer ends, as their mom goes shopping for school supplies, she receives a targeted video advertisement on her WiFi enabled Personal Digital Assistant (PDA) or data capable cellular telephone indicating the availability of the children's television show signature backpacks and lunch boxes, providing her with directions on how to get to 'aisle 12' in the store (physical merchant location) where the product is located.

EX1006, [0058]. By utilizing the household signature profiles, Eldering's system is able to track the entire subscriber household and select suitable cross-device advertisements. EX1003, [46].

Third, a POSITA would have known that utilizing the global routing prefix portion of the device IPv6 address would have been one of a limited number of ways of identifying the household with which received session data should be associated. EX1003, [47]; *see Uber Technologies, Inc. v. X One, Inc.*, 957 F. 3d 1334, 1339-40 (Fed. Cir. 2020). Eldering describes that at least one unique identifier that might be used would be a "customer number," which might have been used to identify all subscribers within a household. *See* EX1004, [0091]. However, utilizing "customer numbers" may become unwieldy to manage across nu-

merous distinct ISPs and may also present privacy concerns. EX1003, [47]. Because every device, regardless of ISP, can have an IPv6 address with a distinct global routing prefix, and the IPv6 address of a device is information that is already transmitted with data requests (and thus does not present additional privacy concerns), the IPv6 address is an advantageous choice among the limited number of ways of identifying the household with which received session data should be associated. EX1003, [47].

b) *Obviousness of Using Banga*

In addition to utilizing an IPv6 address to identify a device and associate its session data with a particular profile, a POSITA would have recognized the benefits of utilizing additional information to track the device and associated subscriber. EX1003, [51]. As described in Section III.A.3, *supra*, Banga, like Elderling, teaches tracking a user's device based on the device's IP address. EX1005, [0041], [0049], [0056]-[0060], [0072]. However, Banga recognized that, "[b]ecause most of the current advertisement industry is based on using cookies, the use of a cookie and/or a device identifier will assist in transitioning the advertisement industry away from the current cookie-only system." EX1005, [0031]. "As a result, each network access device 110 may be identified by a hybrid cookie/device identifier combination." EX1005, [0031].

Accordingly, the Eldering-IPv6-Banga combination represents the predictable and expected result of applying, in the context of Eldering's profile-based advertising system, an additional tracking mechanism for a subscriber's devices, as provided by Banga. EX1003, [52]. From a POSITA's perspective, integrating the supplemental teachings of Banga with Eldering's disclosure would have involved nothing more than applying known solutions to known problems in the field of network-based profiling for targeting advertisements to achieve predictable outcomes. EX1003, [61]. The fundamental aspects of Eldering's disclosure would remain intact, bolstered by the well-known and beneficial teachings of both IPv6 and Banga to successfully arrive at the '398 patent's claimed invention. EX1003, [61].

The following independent reasons support the Eldering-IPv6-Banga combination.

First, as described by Banga, utilizing a hybrid cookie/device identifier combination "the use of a cookie and/or a device identifier will assist in transitioning the advertisement industry away from the current cookie-only system." EX1005, [0031]. By utilizing Banga's hybrid cookie/device identifier, the Eldering-IPv6-Banga combination would be able to more readily integrate with existing advertising systems. EX1003, [63].

Second, Banga recognizes that different IP addresses may be assigned to a device by different access points through which a user may connect to the Internet

(e.g., a router in a coffee shop or a hotspot in the park). EX1005, [0034]-[0035].

Further, Banga recognized that “users can erase their cookies manually or purchase anti-spyware and anti-virus programs which either prevent cookies from downloading or delete cookies entirely (e.g., cookie churn).” EX1005, [0007]. A POSITA would have understood and found obvious that, by utilizing a combination of both a device identifier (e.g., an IPv6 address) with a cookie, the Eldering-IPv6-Banga combination is more robust, as it does not rely solely upon either piece of information. EX1003, [64]. Indeed, a cookie can be used to store the various IP addresses assigned to a device and thus better track and authenticate the user over time. *See, e.g.*, EX1013, [0094]-[0095], [0099]-[0104] (teaching that a cookie can store multiple IP addresses); EX1014, [0120]-[0121], [0133] (teaching that storing a user’s various IP addresses allows for better tracking and may be used to authenticate the user); EX1003, [64].

5. Analysis

a) [1.pre]

To the extent the preamble is limiting, the Eldering-IPv6-Banga combination renders it obvious.

Eldering is related to “a system and method that is capable of correlating ads with subscribers based on a plurality of criteria and also a need for a system and

method for correlating ads with subscriber data that may be distributed over a plurality of locations.” EX1004, [0019]. “The exemplary system includes content providers 510, national advertisers 520, local advertisers 530, a Secure Correlation Server™ (SCS) 540, a Secure Profiling System (SPS) 550, a network operator, an access network and subscribers 580.” EX1004, [0082]. “[S]ubscriber profiles are generated by a Secure Profiling Server (SPS). The characteristics and/or traits associated with the subscriber profile can be retrieved from a plurality of sources.” EX1004, [0022]. “Ad profiles and subscriber profiles are received by a Secure Correlation Server™ (SCS). The SCS correlates the ad profiles with one or more subscriber profiles or one or more group of subscribers.” EX1004, [0025].

In the context of Eldering, a POSITA would have understood or at least found obvious that the SPS and/or SCS are “*programmed hardware computer systems*.” EX1003, [16]. For example, Eldering describes that the SPS and SCS are together connected to subscribers via an access network 570, which may include the Internet. *See* EX1004, [0085]-[0086]. A POSITA would have recognized that systems connected to the Internet and configured to perform operations like those described with respect to the SPS and SCS would have been programmed hardware computer systems. EX1003, [16]. Furthermore, when describing the operation of the SPS, Eldering teaches that “Applicant’s co-pending U.S. application Ser. No. 09/268,519, filed on Mar. 12, 1999 entitled ‘Consumer Profiling System’

(Atty. Docket No. T706-00), describes in further detail, the collection and aggregation, summation and characterization of subscriber purchases,” and that this application is “incorporated by reference in its entirety.” EX1004, [0108]. The ’519 application issued as U.S. Patent No. 6,298,348. *See* EX1015, 1. With respect to its FIG. 4, the ’348 Patent describes “a computer system for a realization of the consumer profiling system.” EX1015, 8:66-67. It goes on to describe that this computer system includes a “system bus 422 [a] transports data amongst the CPU 203, the RAM 204, Read Only Memory—Basic Input Output System (ROM-BIOS) 406 and other components.” EX1015, 8:67-9:3. In other words, Eldering explicitly describes a computer system that carries out the functions of the SPS, which relies upon standard computer system hardware. EX1003, [17]; *see* EX1015, 8:67-9:16.

A POSITA would have understood or at least found obvious that the SPS and SCS could be distinct computer systems or could be components of the same computer system. EX1003, [18]. Eldering illustrates the SPS and SCS as distinct components within FIG. 5, and describes that the SCS “receives subscriber profiles 555 from the SPS 550.” *See* EX1004, FIG. 5, [0085]-[0087]. Based on these teachings, a POSITA would have understood or at least found obvious that the SPS and SCS can be distinction computer systems. EX1003, [18]. However, Eldering also describes that more details about the “collection of subscriber selection data

and the generation of subscriber viewing characteristics” (*i.e.*, the role of the SPS) can be found in “Applicant's co-pending U.S. application . . . Ser. No. 09/205,653 filed on Dec. 3, 1998 entitled ‘Client-Server Based Subscriber Characterization System’ (Atty. Docket No. T703-00),” which Elderling “incorporate[s] in [its] entirety.” EX1004, [0106]. The ’653 application issued as U.S. Patent No. 6,457,010. EX1016, 1. The ’010 Patent describes that profile creation is accomplished by the Secure Correlation Server (SCS), without the existence of a separate and distinct SPS. *See* EX1016, FIG. 1, 5:14-19 (“In generating a subscriber profile, the SCS 100 receives from a user 120 commands in the form of a volume control signal 124 or program selection data 122 which can be in the form of a channel change but may also be an address request which requests the delivery of programming from a network address.”). Based on these teachings, a POSITA would have understood or at least found obvious that the SPS and SCS could have been implemented as a single computer system. EX1003, [18].

Accordingly, a POSITA would have understood and found obvious that the Elderling-IPv6-Banga combination provides *a method implemented using a programmed hardware computer system* [*i.e.*, the SPS, alone or in combination with the SCS], as recited in [1.pre]. EX1003, p. 43.

b) [1.a]

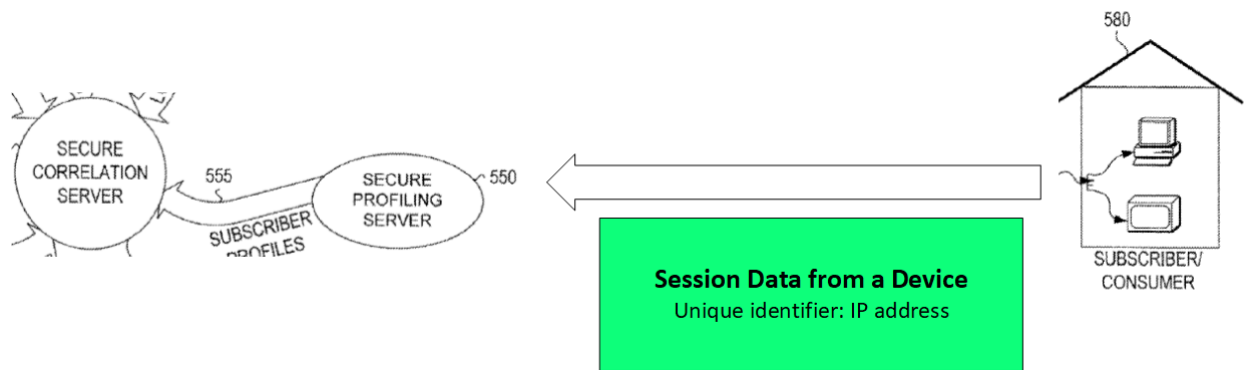
The Elderling-IPv6-Banga combination renders obvious Element [1.a].

As discussed in Section III.A.1, *supra*, Eldering describes a “session profile,” which is “a profile, such as a viewing characteristics profile, that is associated with a single viewing session, wherein the initiation and completion of a viewing session can be determined in various manners.” EX1004, [0104]. The “viewing characteristics” for a “session” may include TV viewing characteristics (*e.g.*, characteristics associated with a user interacting with a set-top box while watching cable television) and/or Internet viewing characteristics (*e.g.*, characteristics associated with a user interacting with a computer while viewing content on the Internet, such as “sites visited, click throughs, bookmarks and other commands applicable to Internet surfing”). EX1003, [20]; *see* EX1004, [0090]-[0092].

Furthermore, Eldering describes that “each subscriber will not be identified by personal information, such as name, but instead will be identified by some unique identification, which may include but is not limited to customer number, **media access control (MAC) ID, and Internet protocol (IP) address.**” EX1004, [0091]. Thus, Eldering describes that, in order to maintain privacy, a subscriber’s data and profiles are identified, for example, by an IP address, which a POSITA would have understood or at least found obvious were identifiers for the subscriber’s device from which session data is obtained. EX1003, [26].

As described in Section III.A.4, a POSITA would have found it obvious that Eldering’s system would have used IPv6 addresses for the devices being monitored

for session data, and the session data would be identified with at least the Ipv6 address, consistent with the teachings of Eldering. EX1003, [37]-[38]. Thus, as shown in the following diagram, Eldering's SPS (alone or in combination with the SCS) would receive session data (e.g., in the form of a session profile) from a subscriber's device, and the session data would be identified by an Ipv6 address associated with the device. EX1003, [53].



**Diagram of Eldering-Ipv6-Banga Combination
Based on EX1004, FIG. 5**

EX1003, [53].

Accordingly, a POSITA would have understood and found obvious that the Eldering-Ipv6-Banga combination would *receiv[e], at the computer system* [e.g., the SPS or a combination of the SCS and SPS], *an electronic identifier of a first device* [e.g., an Ipv6 address of a subscriber's device from which session data is received], as recited in [1.a]. EX1003, p. 43.

c) [1.b.i]

The Eldering-Ipv6-Banga combination renders obvious Element [1.b.i].

As described in Section III.A.1, *supra*, Eldering also describes a “signature profile,” which is a “compilation of viewing sessions.” EX1004, [0105]; *see also id.* [0101], [0109]. The signature profile and the session profiles that make it up are for a “subscriber,” which Eldering teaches may be an individual or a household. EX1003, [21]; *see* EX1004, [0101]-[0102], [0156]. In other words, Eldering teaches that a signature profile may be a collection of session profiles for all of the devices and people within a household. EX1003, [21]; *see* EX1004, [0090] (teaching that a subscriber’s viewing characteristics may include “data from a TV viewing characteristics database 612 and an Internet viewing characteristics database 614”); [0092], FIG. 5; *see also* EX1016, 4:18-24, 4:52-61 (describing household profiles that “average characteristics of a household of multiple subscribers” over a number of sessions), 14:52-15:19 (describing collection of all data requests regardless of the device from which they originate). Indeed, as of the Critical Date, it was known to create household profiles that track all of the devices associated with the household. *See, e.g.*, EX1006, [0054], [0058], [0080] (describing that the system includes “an Internet profiling database 204 which supplies the surfing and content consumption history for the subscriber across multiple access devices”), [0086]; EX1003, [22].

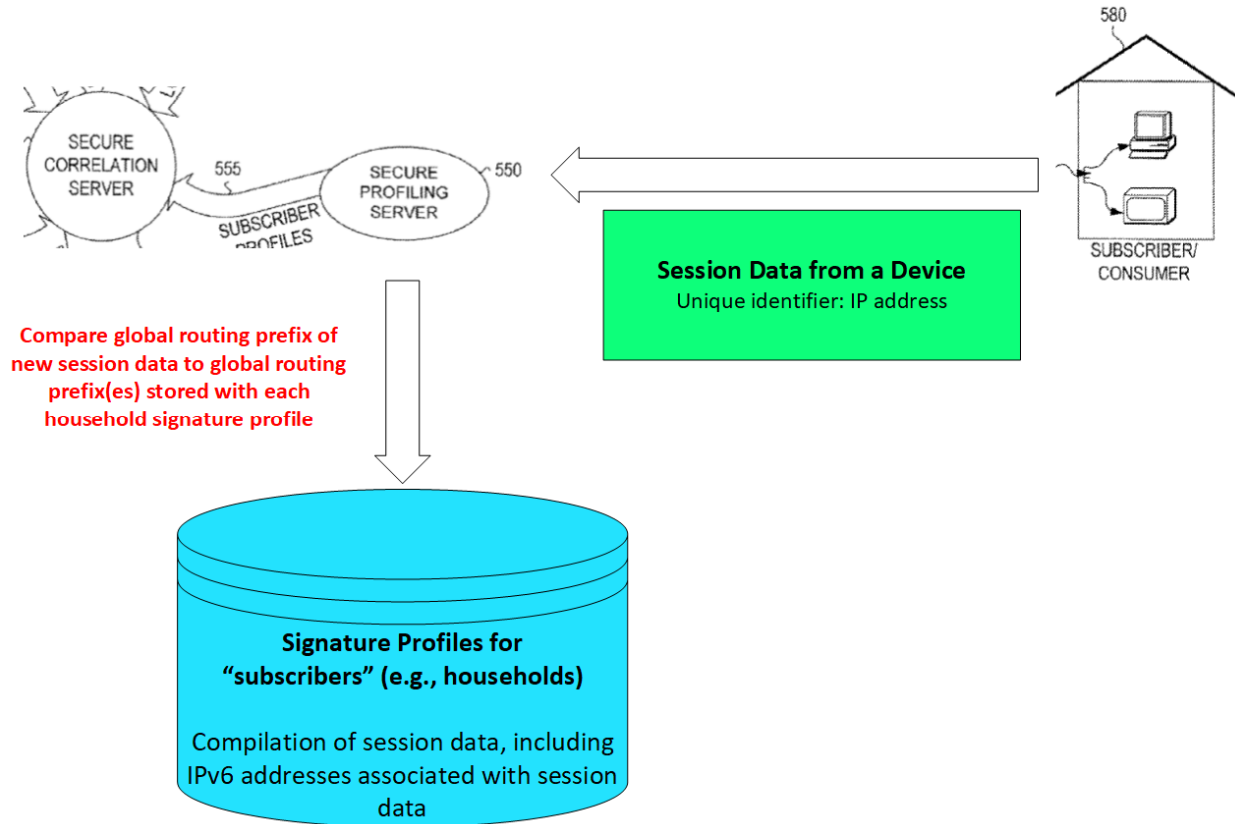
As discussed in Sections III.A.1, *supra*, Eldering teaches a need to associate devices with a household in order to create a household signature profile, and describes that the session data obtained from the household's devices may be identified by an IP address of the device. EX1003, [27]; *see* EX1004, [0091], [0101]-[0105] (teaching that a signature profile is “a profile that is associated with a compilation of viewing sessions that are determined to be associated with one another”). As discussed in Section III.A.3, *supra*, a POSITA would have found it obvious that Eldering's system would have used Ipv6 addresses for the devices being monitored for session data, and the session data would be identified with at least the Ipv6 address. EX1003, [53]. Thus, in order to determine that multiple viewing sessions are associated with the same subscriber household as part of creating a household signature profile, a POSITA would have found it obvious to utilize the global routing prefix of the Ipv6 address used to identify each instance of session data. EX1003, [40], [44].

As discussed in Section III.A.2, *supra*, the IETF intended for ISPs to assign a unique 48-bit global routing prefix to each end network, including the local network of home network subscribers. *See* EX1008, 3. When a device connects to the subscriber's home network, the device is assigned an Ipv6 address that includes the global routing prefix assigned to that network by the ISP and an interface ID that is a transformation of the device's unique MAC ID. EX1003, [36], [39]; *see*

EX1010, 3; EX1008, 3, 5. Thus, when the SPS received session data from that device and the device is connected to the subscriber's home network during the session, the SPS receives an identifying Ipv6 address that included the global routing prefix of the subscriber's home network. EX1003, [39]; *see* EX1004, [0091]; EX1008, 3.

A POSITA would have found it obvious to use the global routing prefix of the subscriber's home network included with the session data to identify the compilation of sessions making up the household signature profile. EX1003, [40]. To accomplish this, a POSITA would have found it obvious for the SPS to store the IPv6 address associated with each session when compiling sessions to create a household signature profile. EX1003, [39]; *see, e.g.*, EX1005, [0054]; EX1006, [0054], [0086]. Each time the SPS receives new session data, the SPS would compare the global routing prefix received with the new session data to the global routing prefixes stored in the household signature profiles from prior sessions. EX1003, [39]; *see, e.g.*, EX1004, [0072], [0105]; EX1005, [0030], [0054], [0072], [0074]. If there is no match, the SPS would create a new household signature profile. EX1003, [39].

This process of comparison is illustrated in the following diagram:



EX1003, [54]. Accordingly, a POSITA would have understood and found obvious that the Eldering-iPv6-Banga combination would have *automatically recogniz[ed] that each of the first* [e.g., a subscriber's computer connected to the subscriber's home network, as shown in Eldering's FIG. 5] *and second devices* [e.g., a subscriber's TV connected to the subscriber's home network via an STB or PVR, as shown in Eldering's FIG. 5] *was connected, independently of the other, to a common local area network* [e.g., that the SPS recognized that the computer and set-top box are connected to the same local household network and therefore should be compiled into the same household signature profile based on comparing the global

network prefix of the IPv6 address of a first device from which session data is received to the global network prefix of the IPv6 address for a second device from which session data was previously received]. EX1003, [66].

There are at least two ways in which the Eldering-IPv6-Banga combination *automatically generate[s] and store[s] electronic indicia of an association between the first device identifier and an electronic identifier of a second device*, as recited in [1.b.i].

(1) First Mapping –Electronic Indicia is Addition of Session Data Including IPv6 Address to Household Signature Profile

As described in Section III.A.1, *supra*, Eldering describes that a “signature profile” is a “compilation of viewing sessions.” EX1004, [0105]; *see also id.* [0101], [0109]. In other words, Eldering describes adding information from each session to a subscriber’s signature profile. *See id.*; EX1003, [54]. And as described above, a POSITA would have found it obvious for the SPS to store the IPv6 address associated with each session when compiling sessions to create a household signature profile. EX1003, [54]; *see, e.g.*, EX1005, [0054]; EX1006, [0054], [0086]. Each time the SPS receives new session data, the SPS would compare the global routing prefix received with the new session data to the global routing prefixes stored in the household signature profiles from prior sessions.

EX1003, [54]; *see, e.g.*, EX1004, [0072], [0105]; EX1005, [0030], [0054], [0072], [0074].

Accordingly, to facilitate the association of session data described by Eldering (*see* EX1004, [0105]; EX1016, 4:18-24, 4:52-61, 14:52-15:19), a POSITA would have understood or at least found obvious that each time Eldering's SPS (either alone or in combination with the SCS) received new session data, it would add that session data to the household signature profile, along with the associated IPv6 address. EX1003, [55]. By adding the session data and associated IPv6 to the household signature profile, the Eldering-IPv6-Banga combination would *automatically generate and store electronic indicia of an association between the first device identifier and an electronic identifier of a second device* [*e.g.*, generating and storing a portion of the signature profile corresponding to session data, which through its storage as part of the signature profile indicates an association between the IPv6 addresses of the subscriber household devices], as recited in [1.b.i].

EX1003, p. 44.

(2) Second Mapping – Electronic Indicia is Cookie
Provided to Subscriber Device

As discussed in Section III.A.4, *supra*, it would further have been obvious to utilize Banga's hybrid cookie/device identifier combination when storing the session data. EX1003, [56]. When a device provides session data to the SPS and it

does not have a cookie associated with the SPS, the SPS can set a cookie that contains an identifier associated with the household signature profile to which the session data corresponds. EX1003, [56]; *see* EX1005, [0031]. This would have allowed Eldering's SPS to match a device more easily with the appropriate household signature profile, even if the device later moves to another network (*e.g.*, a subscriber taking her laptop to a coffee shop). EX1003, [56]; *see* EX1005, [0042], [0053]-[0054]. Further, a POSITA would have found obvious that utilizing a cookie with an identifier associated with the household signature profile would reduce the number of comparisons that need to be made when identifying to which household profile session data corresponds, because any given household signature profile may include all of the IPv6 addresses associated with all of the subscriber's devices. EX1003, [65].

Accordingly, once the SPS identifies the household signature profile to which session data corresponds based on a comparison of the global routing prefix of the IPv6 address of the device from which the session data was received, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would, *with the computer system* [*e.g.*, with the SPS or a combination of the SCS and SPS], *automatically generate and store electronic indicia of an association between the first device identifier and an electronic identifier of a second device* [*e.g.*, creating and setting a cookie in the device from which session

data is received that includes an identifier associated with the corresponding household signature profile], as recited in [1.b.i]. EX1003, pp. 43-44.

d) [1.b.ii]

The Eldering-IPv6-Banga combination renders obvious Element [1.b.ii].

For example, Eldering's FIG. 5 illustrates that the SCS and SPS are connected to a household's local network via an "access network." EX1004, [0073], [0085]-[0086]. Eldering describes that "[t]he access network 150 may be a cable TV (CTV) network, a Switched Digital Video (SDV) network or other networks now known or later discovered and may have a hybrid fiber-coax (BFC) architecture, a satellite-based architecture, an Internet-based architecture, digital subscriber line (xDSL) architecture, fiber to the curb (FTTC) or fiber to the home (FTTH), or other architectures now known or later discovered." EX1004, [0073]. In other words, a POSITA would have understood and found obvious that the devices in household 580 could have been connected to the SCS and SPS across the Internet (*e.g.*, via the subscriber's ISP). EX1003, [24]. In a case where the SCS and SPS are connected via the Internet, the SCS and SPS would not be in the subscriber's local-area network. EX1003, [24]. In fact, as described in Section III.A.1, *supra*, Eldering describes that session data collection and profile creation may be performed at "a third party location connected to the access network," in which case a

POSITA would have understood or at least found obvious that the SPS would receive session data from multiple households and differentiate it. *See* EX1004, [0125]; EX1003, [23].

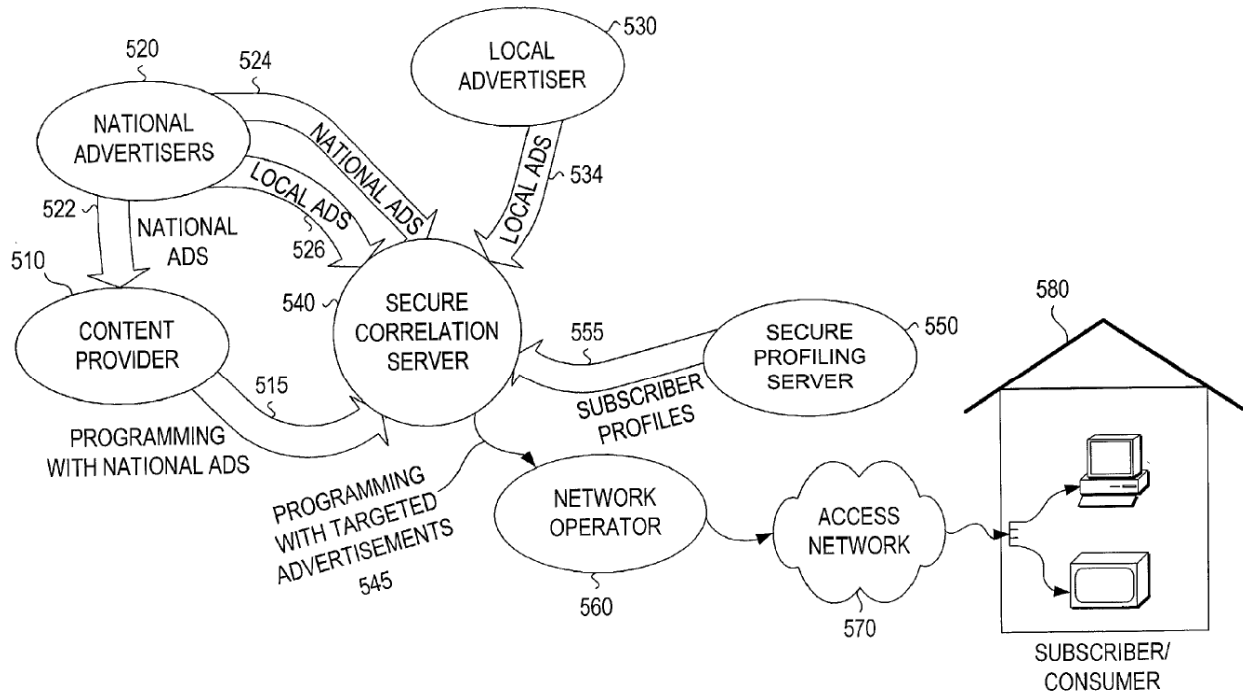


FIG. 5

Accordingly, a POSITA would have understood and found obvious that, in the Eldering-IPv6-Banga combination, *the computer system is connected to the local area network through the Internet but is not in the local area network*, as recited in [1.b.ii]. EX1003, p. 45.

e) [1.c]

The Eldering-IPv6-Banga combination renders obvious Element [1.c].

For example, Eldering describes that “the SCS 540 correlates ads and subscribers based on ad characteristics that are received from advertisers and subscriber profiles generated in the SPS 550.” EX1004, [0136]. “The SCS correlates the ad profiles with one or more subscriber profiles or one or more group of subscribers. The correlation can be performed by applying an operator to the subscriber profiles in the form of market vectors to determine if a particular ad is applicable to the subscriber.” EX1004, [0025]. Eldering describes either that: (1) the SCS can insert ads into the program stream; or (2) that the SCS can direct the subscriber’s device to insert ads into the program stream. *See* EX1004, [0086] (“In one embodiment, the SCS 540 creates presentation streams 545 that have the same programming but targeted ads in place of the default ad”), [0030] (“Alternatively, the ad insertion may be done by the node or by the subscriber (via a PVR)”), [0172]-[0174].

As discussed above in Section III.A.1, *supra*, Eldering describes that the SPS creates profiles based on data from multiple different devices. *See* EX1004, [0087], FIG. 5; *see also* EX1016, 4:18-24, 4:52-61, 14:52-15:19. In this regard, session data collected from one subscriber device (*e.g.*, a computer) is used to build the signature household profile that in turn is used to identify targeted ads served to any/multiple/combinations of the subscriber’s devices (*e.g.*, the computer and a set-top box connected to a TV). EX1003, [59]; *see* EX1004, [0101]-[0105]

(“The viewing characteristics may be maintained for viewing sessions, a compilation of viewing sessions, set time durations (i.e., 30 day window), for households, individual subscribers, different combinations of subscribers, other parameters obvious to those skilled in the art, or some combination thereof. The viewing characteristics profile 740 may be represented in vector, table or graphical form and can be the basis for targeting ads and creating subscriber groups.”), [152]-[154], [0156] (describing “determin[ing] the applicability of an ad to a subscriber (individual/household)”).

Indeed, it was known to send targeted advertisements to one subscriber device based on profile information collected from subscriber devices. EX1006, Abstract, [0020], [0022]-[0024], [0043]; EX1003, [60]. For example,

[W]hile doing his homework, Sean, a high school student has tuned in to a hip hop Internet radio channel from his laptop computer. Sean’s product interest correlation score is thus increased in this product category, “rap music”. Later on in the evening, when he turns on his cell phone to chat with a friend, he receives a targeted text message advertisement for a ring tone of a rap artist’s latest track.

EX1006, [0059].

In a case where the SPS and SCS are separate computer systems (as discussed with respect to Element [1.pre], *supra*), a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would, **with the**

computer system [*e.g.*, the SPS], **based on the electronic indicia of the association between the first and second device identifiers** [*e.g.*, when the second subscriber device is later viewing content and the SCS determines that the second subscriber device needs a targeted ad, the SPS will retrieve the household signature profile that includes the unique identifier set in the cookies of each of the devices earlier determined to be associated with the household, as well as the device’s IPv6 addresses and associated session data], **automatically sending an electronic transmission that causes another programmed hardware computer system to take an action** [*e.g.*, the SPS sending subscriber profile information to the SCS—the other programmed hardware computer system—which then utilizes the profile information to select an advertisement for insertion into the user’s “program stream”], **based on first electronic profile data associated with the first device identifier, with respect to the second device** [*e.g.*, the SCS uses prior session data collected from a first subscriber device, such as a computer, to select an ad to be displayed on a second subscriber device, such as a TV], **which is indicated at the time of the action by the second device identifier** [*e.g.*, the SCS inserts a targeted ad into the program stream of the second subscriber device, and when the TV is connected to the subscriber’s household network, the targeted ad will be sent to the IPv6 address associated with the TV that included the global routing prefix of the subscriber’s household network]. EX1003, pp. 45-46.

In a case where the SPS and SCS are part of the same computer system (as discussed with respect to Element [1.pre], *supra*), a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would, **with the computer system** [*e.g.*, the SPS in combination with the SCS], **based on the electronic indicia of the association between the first and second device identifiers** [*e.g.*, when the second subscriber device is later viewing content and the SCS determines that the second subscriber device needs a targeted ad, the SPS will retrieve the household signature profile that includes the unique identifier set in the cookies of each of the devices earlier determined to be associated with the household, as well as the device's IPv6 addresses and associated session data], **automatically sending an electronic transmission that causes another programmed hardware computer system to take an action** [*e.g.*, the combination of the SPS and SCS sending instructions to the subscriber's STB/PVR—the other programmed hardware computer system—to insert ads at the subscriber location], **based on first electronic profile data associated with the first device identifier, with respect to the second device** [*e.g.*, the combination of the SPS and SCS uses prior session data collected from a first subscriber device, such as a computer, to select an ad to be displayed on a second subscriber device, such as a TV], **which is indicated at the time of the action by the second device identifier** [*e.g.*, the targeted ad are inserted into the program stream of the second subscriber device such

as a TV, and when the TV is connected to the subscriber's household network, the targeted ad will be sent to the IPv6 address associated with the TV that included the global routing prefix of the subscriber's household network]. EX1003, pp. 46-47.

f) [2]

The Eldering-IPv6-Banga combination renders obvious Claim [2].

As described with respect to [1.a] and [1.b.i], the subscriber's devices are determined to be associated with the same household signature profile based on the global routing prefix portion of their IPv6 address. *See* EX1003, [40]; EX1004, [0105]. Thus, when a given subscriber device is connected to the subscriber's local household network, network traffic will be routed to that device's IPv6 address, which will include the global routing prefix shared by all of the devices connected to the subscriber's local household network. EX1003, p. 47.

Accordingly, in the Eldering-IPv6-Banga combination, *the electronic association is recognized based on a common IP address, or portion thereof* [e.g., the subscriber's devices are determined to be associated with the same household signature profile based on the global routing prefix of their IPv6 address], *wherein*

network traffic is routed via the common IP address⁴ for each of the first and second devices when each is connected to the local area network [e.g., when a given subscriber device is connected to the subscriber's local household network, network traffic will be routed to that device's IPv6 address, which will include the global routing prefix shared by all of the devices connected to the subscriber's local household network], as recited in Claim 2. EX1003, pp. 47-48.

g) [3]

The Eldering-IPv6-Banga combination renders obvious Claim [2].

As discussed with respect to [1.a] and [1.b.i], the subscriber's devices are determined to be associated with the same household signature profile based on the global routing prefix portion of their IPv6 address. *See* EX1003, [40]; EX1004, [0105]. The global routing prefix would have been assigned to all of the devices comprising the subscriber's local household network, including any router (e.g., an

⁴ For the antecedent basis of this phrase to make sense, this phrase should refer back to the "common IP address, or portion thereof." EX1003, p. 47, n. 2. That is, when the association is made based on a common portion of the IP address, there may not be a full common IP address, so a POSITA would have understood this claim to mean that network traffic is routed to an IP address including the common portion. *Id.*

“ISP router”) that may, for example, serve to connect the subscriber’s devices to the Internet. *See* EX1003, [40]; EX1008, 2-3; EX1010, 2-3; EX1011, 17-20.

Accordingly, in the Eldering-IPv6-Banga combination, a POSITA would have at least found it obvious that *the common IP address⁵ comprises an IP address, or portion thereof*, [e.g., the common global network prefix portion of the IPv6 address] *of a modem or router by which the first and second devices are connected to the local area network* [e.g., the ISP router that connects the subscriber’s local household network to the Internet, which would have an IPv6 address with the same global network prefix as all other devices connected to the subscriber’s local household network], as recited in claim [3]. EX1003, p. 48.

h) [4]

The Eldering-IPv6-Banga combination renders obvious Claim [4].

- (1) Under the First Mapping of Element [1.b.i]

⁵ As with claim [2], when the association is made based on a common portion of the IP address and there is not a full common IP address, a POSITA would have understood this phrase to mean an IP address including the common portion.

EX1003, p. 48, n. 2.

As described with respect to Element [1.b.i], *supra*, a POSITA would have understood and found obvious in the context of the Eldering-IPv6-Banga combination that, to facilitate the association of session data described by Eldering (*see* EX1004, [0105]; EX1016, 4:18-24, 4:52-61, 14:52-15:19), each time the SPS (either alone or in combination with the SCS) received new session data, it would add that session data to the household signature profile, along with the associated IPv6 address. EX1003, [39], [55]. Through its storage as part of the signature profile, the new session data portion of the stored profile indicates an association between the IPv6 addresses of the subscriber household devices, and thus the signature profile itself—or at least the new session data portion thereof—is the claimed electronic indicia of the electronic association. EX1003, [55].

As a result, the updated signature profile with the new session data will include the IPv6 address for each of the household devices from which session data has been collected (*e.g.*, each of the TV+STB and computer illustrated in FIG. 5). EX1003, [55]. As described with respect to Element [1.b.i], *supra*, in order to have been associated with the household signature profile, it would have been obvious for each IPv6 address to include the common global network prefix assigned to the household LAN (*i.e.*, the common portion of the IP addresses). EX1003, [40], [54], [65]. Accordingly, ***the electronic indicia of the electronic association***

include or reference indicia of the common IP address or portion thereof, as recited in claim [4]. EX1003, pp. 48-49.

(2) Under the Second Mapping of Element [1.b.i]

As described in Section III.A.4.b and with respect to Element [1.b.i], *supra*, a POSITA would have found it obvious for the profile-based advertising system of the Eldering-IPv6-Banga combination to utilize the hybrid cookie/device identifier combination taught by Banga. EX1003, [56]. When a device provides session data to the SPS and it does not have a cookie associated with the SPS, the SPS can set a cookie that contains an identifier associated with the household signature profile. EX1003, [56]; *see* EX1005, [0031]. By including the identifier associated with the household signature profile, the cookie includes a reference indicia of the common IP address, because the household signature profile would contain the IPv6 addresses of the household's various devices to facilitate the comparison of the global network prefixes. EX1003, [56]. Moreover, as described in Section III.A.1.b, it was known that a cookie can be used to store the various IP addresses assigned to a device and thus be used to better track and authenticate the user over time. *See, e.g.*, EX1013, [0094]-[0095], [0099]-[0104]; EX1014, [0120]-[0121], [0133]; EX1003, [64].

Accordingly, in the Eldering-IPv6-Banga combination, a POSITA would have at least found it obvious that *the electronic indicia of the electronic association include or reference indicia of the common IP address or portion thereof*, as recited in claim [4]. EX1003, p. 49.

i) [6]

The Eldering-IPv6-Banga combination renders obvious Claim [6].

As described with respect to Element [1.c], *supra*, Eldering describes that the SPS creates profiles based on data from multiple different devices. EX1003, [21], [55], [59]; *see* EX1004, [0087], FIG. 5; *see also* EX1016, 4:18-24, 4:52-61, 14:52-15:19. In this regard, session data collected from one subscriber device (*e.g.*, a computer) is used to build the signature household profile that in turn is used to identify targeted ads served to any of the subscriber's devices (*e.g.*, the computer and a television). EX1003, [59]; *see* EX1004, [0101]-[0105] (“The viewing characteristics may be maintained for viewing sessions, a compilation of viewing sessions, . . . for households, individual subscribers, different combinations of subscribers, other parameters obvious to those skilled in the art, or some combination thereof. The viewing characteristics profile . . . can be the basis for targeting ads . . .”), [0156] (describing “determin[ing] the applicability of an ad to a subscriber (individual/household)”). In fact, Eldering's FIG. 5 shows a household with a computer and a TV. EX1003, [59].

Accordingly, in the Eldering-IPv6-Banga combination, a POSITA would have at least found it obvious that ***the first device is an online user interface device*** [e.g., the computer in Eldering's FIG. 5] ***and the second user interface device is a television set-top box*** [e.g., the television in Eldering's FIG. 5], as recited in Claim [6]. EX1003, p. 49.

j) [7]

The Eldering-IPv6-Banga combination renders obvious Claim [7].

Eldering describes that "Internet transactions are not restricted to computers as one can connect to the Internet with wireless phones, personal digital assistance, and other devices now known to those skilled in the art or later discovered."

EX1004, [0087]. Thus, Eldering describes collecting session data (e.g., Internet transaction data) from a mobile device (e.g., a wireless phone or PDA). *Id.*; EX1003, [57]. A POSITA would have understood and found obvious that a wireless telephone and PDA are capable of moving between networks, and therefore be connected to any one of them (e.g., the subscriber's household network) intermittently. EX1003, [57]; *see, e.g.*, EX1005, [0034]-[0035] (describing different types of access points at different locations to which a mobile device can connect in order to access the Internet).

Accordingly, in the Eldering-IPv6-Banga combination, a POSITA would have at least found it obvious that ***the first device comprises a mobile device that***

is connected to the local area network only intermittently, as recited in Claim [7].

EX1003, p. 50.

k) [8]

The Eldering-IPv6-Banga combination renders obvious Claim [8].

As described with respect to Element [1.c], *supra*, Eldering describes that “the SCS 540 correlates ads and subscribers based on ad characteristics that are received from advertisers and subscriber profiles generated in the SPS 550.”

EX1004, [0136]. “The SCS correlates the ad profiles with one or more subscriber profiles or one or more group of subscribers. The correlation can be performed by applying an operator to the subscriber profiles in the form of market vectors to determine if a particular ad is applicable to the subscriber.” EX1004, [0025]. Eldering describes either that: (1) the SCS can insert ads into the program stream; or (2) that the SCS can direct the subscriber’s device to insert ads into the program stream. *See* EX1004, [0086] (“In one embodiment, the SCS 540 creates presentation streams 545 that have the same programming but targeted ads in place of the default ad”), [0030] (“Alternatively, the ad insertion may be done by the node or by the subscriber (via a PVR)”), [0172]-[0174]; EX1003, [58].

As described above in Section III.A.1, *supra*, Eldering describes that the SPS creates profiles based on data from multiple different devices. *See* EX1004, [0087], FIG. 5; *see also* EX1016, 4:18-24, 4:52-61, 14:52-15:19. In this regard,

session data collected from one subscriber device (*e.g.*, a computer) is used to build the signature household profile that in turn is used to identify targeted ads served to any of the subscriber's devices (*e.g.*, the computer and a television). EX1003, [59]; *see* EX1004, [0101]-[0105] (“The viewing characteristics may be maintained for viewing sessions, a compilation of viewing sessions, set time durations (*i.e.*, 30 day window), for households, individual subscribers, different combinations of subscribers, other parameters obvious to those skilled in the art, or some combination thereof. The viewing characteristics profile 740 may be represented in vector, table or graphical form and can be the basis for targeting ads and creating subscriber groups.”), [152]-[154], [0156] (describing “determin[ing] the applicability of an ad to a subscriber (individual/household)”).

Accordingly, in the Eldering-IPv6-Banga combination, a POSITA would have at least found it obvious that ***the action comprises automatically causing, with the computer system*** [*e.g.*, either the SPS under the first mapping of Element 1.c or the combination of the SPS and SCS under the second mapping of Element 1.c], ***a selected advertisement to be directed to the second device, wherein the advertisement is selected based at least in part on at least a portion of the first electronic profile data*** [*e.g.*, the SCS uses prior session data collected from a first sub-

subscriber device, such as a computer, to select an ad to be displayed on a second subscriber device, such as a TV, and either inserts the ad itself or instructs the subscriber's device to insert the ad], as recited in claim [8]. EX1003, p. 50.

D) [9]

The Eldering-IPv6-Banga combination renders obvious Claim [9].

As described with respect to the first mapping of Element [1.b.i], *supra*, Eldering describes adding information from each session to a subscriber's signature profile. *See* EX1004, [0105]; *see also id.* [0101], [0109]; EX1003, [54]. As further described with respect to Element [1.b.i], *supra*, a POSITA would have found it obvious for the SPS to store the IPv6 address associated with each session when compiling sessions to create a household signature profile. EX1003, [54]; *see, e.g.*, EX1005, [0054]; EX1006, [0054], [0086]. Each time the SPS receives new session data, the SPS would compare the global routing prefix received with the new session data to the global routing prefixes stored in the household signature profiles from prior sessions. EX1003, [54]; *see, e.g.*, EX1004, [0072], [0105]; EX1005, [0030], [0054], [0072], [0074].

Accordingly, to facilitate the association of session data described by Eldering (*see* EX1004, [0105]; EX1016, 4:18-24, 4:52-61, 14:52-15:19), a POSITA would have understood or at least found obvious that each time Eldering's SPS (either alone or in combination with the SCS) received new session data, it would add

that session data to the household signature profile, along with the associated IPv6 address. EX1003, [55]. By adding the session data and associated IPv6 to the household signature profile, the Eldering-IPv6-Banga combination would have been configured such that *the electronic indicia of the electronic association comprise one or more electronic records in a database accessible to the computer system* [e.g., the session data portions of the household signature profile, which include the IPv6 addresses of the household devices from with the session data is received], as recite in Claim [9]. EX1003, pp. 50-51.

m) [10]

The Eldering-IPv6-Banga combination renders obvious Claim [10].

As described with respect to the second mapping of Element [1.b.i], *supra*, it would further have been obvious to utilize Banga's hybrid cookie/device identifier combination when storing the session data. EX1003, [56]. When a device provides session data to the SPS and it does not have an SPS cookie, the SPS can set a cookie that contains an identifier associated with the household signature profile to which the session data corresponds. EX1003, [56]; *see* EX1005, [0031]. This would have allowed Eldering's SPS to match a device more easily with the appropriate household signature profile, even if the device later moves to another network (e.g., a customer taking her laptop to a coffee shop). EX1003, [56]; *see* EX1005, [0042], [0053]-[0054].

Accordingly, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would have been configured such that *the electronic indicia of the electronic association comprise one or more tags or cookies readable by the computer system that are stored on the first device or second device* [e.g., the cookie stored on each device matched to the household via its IPv6 address], as recited in Claim [10]. EX1003, p. 51.

n) [11]

The Eldering-IPv6-Banga combination renders obvious Claim [11].

As described with respect to the second mapping of Element [1.b.i], *supra*, it would further have been obvious to utilize Banga's hybrid cookie/device identifier combination when storing the session data. EX1003, [56]. When a device provides session data to the SPS and it does not have an SPS cookie, the SPS can set a cookie that contains an identifier associated with the household signature profile to which the session data corresponds. EX1003, [56]; *see* EX1005, [0031]. This would have allowed Eldering's SPS to match a device more easily with the appropriate household signature profile, even if the device later moves to another network (e.g., a customer taking her laptop to a coffee shop). EX1003, [56]; *see* EX1005, [0042], [0053]-[0054]. Further, a POSITA would have found obvious that utilizing a cookie with an identifier associated with the household signature

profile would reduce the number of comparisons that need to be made when identifying which household profile session data corresponds to, because any given household signature profile may include all of the IPv6 addresses associated with all of the subscriber's devices. EX1003, [65].

Accordingly, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would, *using the computer system, automatically stor[e], in a memory in the first device or second device, the one or more tags or cookies*, as recited in Claim [11]. EX1003, [51].

o) [12]

The Eldering-IPv6-Banga combination renders obvious Claim [11].

As described by Eldering, “each subscriber will not be identified by personal information, such as name, but instead will be identified by some unique identification, which may include but it not limited to customer number, media access control (MAC) ID, and Internet protocol (IP) address.” EX1004, [0091]. Accordingly, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination would have been configured such that *the electronic indicia of the electronic association include no personally identifiable information pertaining to a user of the first device or second device*, as recited in Claim [11]. EX1003, [51].

p) [13.pre]

Element [13.pre] is substantially the same as Element [1.pre]. The Eldering-IPv6-Banga combination renders obvious Element [13.pre] for at least the same reasons described above with respect to Element [1.pre]. *See* Element [1.pre], *supra*; EX1003, p. 52.

q) [13.a]

Element [13.a] is substantially the same as at least portions of Element [1.c]. The Eldering-IPv6-Banga combination renders obvious Element [13.a] for at least the same reasons described above with respect to Element [1.c]. *See* Element [1.c], *supra*; EX1003, p. 52.

r) [13.b]

Element [13.b] is substantially the same as at least portions of Elements [1.b.i] and [1.b.ii]. The Eldering-IPv6-Banga combination renders obvious Element [13.b] for at least the same reasons described above with respect to Elements [1.b.i] and [1.b.ii]. *See* Elements [1.b.i] and [1.b.ii], *supra*; EX1003, p. 52.

s) [14.a]

Element [13.a] is substantially the same as at least portions of Element [1.a]. The Eldering-IPv6-Banga combination renders obvious Element [14.a] for at least the same reasons described above with respect to Element [1.a]. *See* Element [1.a], *supra*; EX1003, p. 52.

t) [14.b]

Element [14.b] is substantially the same as at least portions of Element [1.b.i]. The Eldering-IPv6-Banga combination renders obvious Element [14.b] for at least the same reasons described above with respect to Element [1.b.i]. *See* Element [1.b.i], *supra*; EX1003, pp. 52-53.

u) [15], [21]

Claims [15] and [21] are substantially the same as at least portions of Claim [7]. The Eldering-IPv6-Banga combination renders obvious Claims [15] and [21] for at least the same reasons described above with respect to Claim [7]. *See* Claim [7], *supra*; EX1003, pp. 53, 54.

v) [16], [28], [33], [37], [42]

Claims [16], [28], [33], [37], and [42] are substantially the same as at least portions of Claim [2]. The Eldering-IPv6-Banga combination renders obvious Claims [16], [28], [33], [37], and [42] for at least the same reasons described above with respect to Claim [2]. *See* Claim [2], *supra*; EX1003, pp. 53, 56, 58, 60, 62.

w) [17]

Claim [17] is substantially the same as at least portions of Claim [3]. The Eldering-IPv6-Banga combination renders obvious Claim [17] for at least the same reasons described above with respect to Claim [3]. *See* Claim [3], *supra*; EX1003, p. 53.

x) [18]

Claim [18] is substantially the same as at least portions of Claim [4]. The Eldering-IPv6-Banga combination renders obvious Claim [18] for at least the same reasons described above with respect to Claim [4]. *See* Claim [4], *supra*; EX1003, p. 53.

y) [20]

Claim [20] is substantially the same as at least portions of Claim [6]. The Eldering-IPv6-Banga combination renders obvious Claim [20] for at least the same reasons described above with respect to Claim [6]. *See* Claim [6], *supra*; EX1003, p. 54.

z) [22], [29], [34], [38], [43]

Claims [22], [29], [34], [38], and [43] are substantially the same as at least portions of Claim [8]. The Eldering-IPv6-Banga combination renders obvious Claims [22], [29], [34], [38], and [43] for at least the same reasons described above with respect to Claim [8]. *See* Claim [8], *supra*; EX1003, pp. 54, 56-57, 58-59, 60-61, 62-63.

aa) [23]

Claim [23] is substantially the same as at least portions of Claim [9]. The Eldering-IPv6-Banga combination renders obvious Claim [23] for at least the same reasons described above with respect to Claim [9]. *See* Claim [9], *supra*; EX1003, p. 54.

bb) [24]

Claim [24] is substantially the same as at least portions of Claim [10]. The Eldering-IPv6-Banga combination renders obvious Claim [24] for at least the same reasons described above with respect to Claim [10]. *See* Claim [10], *supra*; EX1003, p. 54.

cc) [25]

Claim [25] is substantially the same as at least portions of Claim [11]. The Eldering-IPv6-Banga combination renders obvious Claim [25] for at least the same reasons described above with respect to Claim [11]. *See* Claim [11], *supra*; EX1003, p. 55.

dd) [26], [30], [35], [39], [44]

Claims [26], [30], [35], [39], and [44] are substantially the same as at least portions of Claim [12]. The Eldering-IPv6-Banga combination renders obvious Claims [26], [30], [35], [39], and [44] for at least the same reasons described above with respect to Claim [12]. *See* Claim [12], *supra*; EX1003, pp. 55, 57, 59, 61, 63.

ee) [27.pre]

To the extent the preamble is limiting, the Eldering-IPv6-Banga combination renders it obvious.

In the context of Eldering, a POSITA would have understood or at least found obvious that the SPS and/or SCS are ***one or more computer*** that are ***programmed and connected***. EX1003, p. 55. For example, Eldering describes that

the SPS and SCS are together connected to subscribers via an access network 570, which may include the Internet. *See* EX1004, [0085]-[0086]. A POSITA would have recognized that systems connected to the Internet and configured to perform operations like those described with respect to the SPS and SCS would have been programmed hardware computer systems. EX1003, [16]. Furthermore, when describing the operation of the SPS, Eldering teaches that “Applicant’s co-pending U.S. application Ser. No. 09/268,519, filed on Mar. 12, 1999 entitled ‘Consumer Profiling System’ (Atty. Docket No. T706-00), describes in further detail, the collection and aggregation, summation and characterization of subscriber purchases,” and that this application is “incorporated by reference in its entirety.” EX1004, [0108]. The ’519 application issued as U.S. Patent No. 6,298,348. *See* EX1015, 1. With respect to its FIG. 4, the ’348 Patent describes “a computer system for a realization of the consumer profiling system.” EX1015, 8:66-67. It goes on to describe that this computer system includes a “system bus 422 [a] transports data amongst the CPU 203, the RAM 204, Read Only Memory—Basic Input Output System (ROM-BIOS) 406 and other components.” EX1015, 8:67-9:3. In other words, Eldering explicitly describes a computer system that carries out the functions of the SPS, which relies upon standard computer system hardware. EX1003, [17]; *see* EX1015, 8:67-9:16.

Accordingly, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination provides *[a] system comprising one or more computers, wherein the one or more computers are programmed and connected,* as recited in [27.pre]. EX1003, p. 55.

ff) [27.a]

Element [27.a] is substantially the same as at least portions of Element [1.a]. The Eldering-IPv6-Banga combination renders obvious Element [27.a] for at least the same reasons described above with respect to Element [1.a]. *See* Element [1.a], *supra*; EX1003, p. 55.

gg) [27.b.i]

Element [27.b.i] is substantially the same as at least portions of Element [1.b.i]. The Eldering-IPv6-Banga combination renders obvious Element [27.b.i] for at least the same reasons described above with respect to Element [1.b.i]. *See* Element [1.b.i], *supra*; EX1003, p. 55.

hh) [27.b.ii]

Element [27.b.ii] is substantially the same as at least portions of Element [1.b.ii]. The Eldering-IPv6-Banga combination renders obvious Element [27.b.ii] for at least the same reasons described above with respect to Element [1.b.ii]. *See* Element [1.b.ii], *supra*; EX1003, pp. 55-56.

ii) [27.c]

Element [27.c] is substantially the same as at least portions of Element [1.c]. The Eldering-IPv6-Banga combination renders obvious Element [27.c] for at least the same reasons described above with respect to Element [1.c]. *See* Element [1.c], *supra*; EX1003, p. 56.

jj) [31.pre]

Element [31.pre] is substantially the same as Element [27.pre]. The Eldering-IPv6-Banga combination renders obvious Element [31.pre] for at least the same reasons described above with respect to Element [27.pre]. *See* Element [27.pre], *supra*; EX1003, p. 57.

kk) [31.a]

Element [31.a] is substantially the same as at least portions of Element [1.c]. The Eldering-IPv6-Banga combination renders obvious Element [31.a] for at least the same reasons described above with respect to Element [1.c]. *See* Element [1.c], *supra*; EX1003, p. 57.

ll) [31.b]

Element [31.b] is substantially the same as at least portions of Elements [1.b.i] and [1.b.ii]. The Eldering-IPv6-Banga combination renders obvious Element [31.b] for at least the same reasons described above with respect to Elements [1.b.i] and [1.b.ii]. *See* Elements [1.b.i] and [1.b.ii], *supra*; EX1003, pp. 57-58.

mm) [32.a]

Element [32.a] is substantially the same as at least portions of Element [1.a]. The Eldering-IPv6-Banga combination renders obvious Element [32.a] for at least the same reasons described above with respect to Element [1.a]. *See* Element [1.c], *supra*; EX1003, p. 58.

nn) [32.b]

Element [32.b] is substantially the same as at least portions of Element [1.b.i]. The Eldering-IPv6-Banga combination renders obvious Element [32.b] for at least the same reasons described above with respect to Element [1.b.i]. *See* Element [1.b.i], *supra*; EX1003, p. 58.

oo) [36.pre]

To the extent the preamble is limiting, the Eldering-IPv6-Banga combination renders it obvious.

In the context of Eldering, a POSITA would have understood or at least found obvious that the SPS and/or SCS include an ***article comprising a non-transitory tangible medium encoding computer-readable instructions that, when applied to one or more computers, instruct the one or more computers to perform a method.*** EX1003, p. 59. For example, Eldering describes that the SPS and SCS are together connected to subscribers via an access network 570, which may include the Internet. *See* EX1004, [0085]-[0086]. A POSITA would have recognized that systems connected to the Internet and configured to perform operations

like those described with respect to the SPS and SCS would have been programmed hardware computer systems. EX1003, [16]. Furthermore, when describing the operation of the SPS, Eldering teaches that “Applicant’s co-pending U.S. application Ser. No. 09/268,519, filed on Mar. 12, 1999 entitled ‘Consumer Profiling System’ (Atty. Docket No. T706-00), describes in further detail, the collection and aggregation, summation and characterization of subscriber purchases,” and that this application is “incorporated by reference in its entirety.” EX1004, [0108]. The ’519 application issued as U.S. Patent No. 6,298,348. *See* EX1015, 1. With respect to its FIG. 4, the ’348 Patent describes “a computer system for a realization of the consumer profiling system.” EX1015, 8:66-67. It goes on to describe that this computer system includes a “system bus 422 [a] transports data amongst the CPU 203, the RAM 204, Read Only Memory—Basic Input Output System (ROM-BIOS) 406 and other components.” EX1015, 8:67-9:3. In other words, Eldering explicitly describes a standard computer system that carries out the functions of the SPS, which would include a non-transitory tangible medium encoding computer-readable instructions that, when applied to one or more computers, instruct the one or more computers to perform a method. EX1003, [17]; *see* EX1015, 8:67-9:16.

Accordingly, a POSITA would have understood and found obvious that the Eldering-IPv6-Banga combination provides an *article comprising a non-transitory tangible medium encoding computer-readable instructions that, when applied to*

one or more computers, instruct the one or more computers to perform a method,
as recited Element [36.pre].

pp) [36.a]

Element [36.a] is substantially the same as at least portions of Element [1.a].
The Eldering-IPv6-Banga combination renders obvious Element [36.a] for at least
the same reasons described above with respect to Element [1.a]. *See* Element [1.a],
supra; EX1003, p. 59.

qq) [36.b.i]

Element [36.b.i] is substantially the same as at least portions of Element
[1.b.i]. The Eldering-IPv6-Banga combination renders obvious Element [36.b.i]
for at least the same reasons described above with respect to Element [1.b.i]. *See*
Element [1.b.i], *supra*; EX1003, p. 59.

rr) [36.b.ii]

Element [36.b.ii] is substantially the same as at least portions of Element
[1.b.ii]. The Eldering-IPv6-Banga combination renders obvious Element [36.b.ii]
for at least the same reasons described above with respect to Element [1.b.ii]. *See*
Element [1.b.ii], *supra*; EX1003, p. 60.

ss) [36.c]

Element [36.c] is substantially the same as at least portions of Element [1.c].
The Eldering-IPv6-Banga combination renders obvious Element [36.c] for at least

the same reasons described above with respect to Element [1.c]. *See* Element [1.c], *supra*; EX1003, p. 60.

tt) [40.pre]

Element [40.pre] is substantially the same as Element [36.pre]. The Eldering-IPv6-Banga combination renders obvious Element [40.pre] for at least the same reasons described above with respect to Element [36.pre]. *See* Element [36.pre], *supra*; EX1003, p. 60.

uu) [40.a]

Element [40.a] is substantially the same as at least portions of Element [1.c]. The Eldering-IPv6-Banga combination renders obvious Element [40.a] for at least the same reasons described above with respect to Element [1.c]. *See* Element [1.c], *supra*; EX1003, p. 60.

vv) [40.b]

Element [40.b] is substantially the same as at least portions of Elements [1.b.i] and [1.b.ii]. The Eldering-IPv6-Banga combination renders obvious Element [40.b] for at least the same reasons described above with respect to Elements [1.b.i] and [1.b.ii]. *See* Elements [1.b.i] and [1.b.ii], *supra*; EX1003, pp. 60-61.

ww) [41.a]

Element [41.a] is substantially the same as at least portions of Element [1.a]. The Eldering-IPv6-Banga combination renders obvious Element [41.a] for at least

the same reasons described above with respect to Element [1.a]. *See* Element [1.a], *supra*; EX1003, p. 62.

xx) [41.b]

Element [41.b] is substantially the same as at least portions of Element [1.b.i]. The Eldering-IPv6-Banga combination renders obvious Element [41.b] for at least the same reasons described above with respect to Element [1.b.i]. *See* Element [1.b.i], *supra*; EX1003, p. 62.

IV. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Petitioner authorizes charge of fees to Deposit Account 06-1050.

V. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

LiveIntent, Inc. is the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

To Petitioner's knowledge, the '398 Patent is the subject of the following pending civil actions:

- *AlmondNet, Inc. et al v. Roku, Inc.*, Case No. 6-21-cv-00731 (WDTX);
- *Roku, Inc. v. AlmondNet, Inc. et al*, Case No. 1-21-cv-01035 (DDE);
- *AlmondNet, Inc. et al v. Amazon.com, Inc. et al*, Case Nos. 6-21-cv-00898, 7-25-cv-00165 (WDTX);

- *AlmondNet, Inc. et al v. Oracle Corporation*, Case No. 6-24-cv-00303 (WDTX);
- *AlmondNet, Inc. et al v. LiveIntent, Inc.*, Case No. 1-24-cv-00831 (DDE);
- *AlmondNet, Inc. et al v. Connatix Native Exchange, Inc.*, Case No. 1-24-cv-01296 (DDE);
- *AlmondNet, Inc. et al v. Viant Technology Inc. et al*, Case No. 1-25-cv-00566 (DDE);
- *AlmondNet, Inc. et al v. TikTok Inc.*, Case No. 1-25-cv-00611 (DDE);
- *Intent IQ, LLC v. MNTN, Inc.*, Case No. 7-25-cv-00246 (WDTX);
- *Intent IQ, LLC v. Invidi Technologies Corporation*, Case No. 1-25-cv-00809 (DDE)
- *Intent IQ, LLC v. Adform, Inc.*, Case No. 1-25-cv-00822 (DDE)
- *TikTok Inc v. AlmondNet, Inc. et al.*, Case No. 3-25-cv-05721 (NDCA)
- *Intent IQ, LLC v. GrowthCode, LLC*, Case No. 1-25-cv-00865 (DDE)

To Petitioner's knowledge, the '398 Patent was the subject of the following terminated civil actions:

- *AlmondNet, Inc. et al v. Yahoo! Inc.*, Case No. 1-16-cv-01557 (EDNY);

- *AlmondNet, Inc. et al v. Oath Holdings Inc.*, Case No. 1-19-cv-00247 (DDE);
- *AlmondNet, Inc. et al v. Samsung Electronics Co., Ltd. et al.*, Case No. 6-21-cv-00891 (WDTX);
- *AlmondNet, Inc. et al v. Microsoft Corporation*, Case No. 6-21-cv-00897 (WDTX);
- *AlmondNet, Inc. et al v. Facebook, Inc.*, Case No. 6-21-cv-00896 (WDTX);
- *AlmondNet, Inc., et al. v. Samsung Electronics Co., Ltd., et al.* Case No. 4-22-cv-07515 (NDCA);
- *AlmondNet, Inc., et al. v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, Case No. 4-22-cv-08911 (NDCA);
- *AlmondNet, Inc. et al v. LinkedIn Corporation*, Case No. 1-23-cv-01373 (DDE); and
- *AlmondNet, Inc. et al v. Lotame Solutions, Inc.*, Case No. 1-24-cv-00376 (DDE)

To Petitioner's knowledge, the '398 Patent was the subject of the following terminated IPRs:

- *Yahoo! Inc. v. Intent IQ, LLC et al.*, IPR2017-01299;
- *Meta Platforms, Inc. f/k/a Facebook, Inc. v. Intent IQ, LLC et al.*,

IPR2022-00773;

- *Roku, Inc. v. Intent IQ, LLC et al*, IPR2022-01236;
- *Microsoft Corporation et al v. Intent IQ, LLC*, IPR2022-01420;
- *Amazon.com, Inc. et al v. Intent IQ, LLC et al*, IPR2023-00227

The '398 Patent is subject to a terminal disclaimer with respect to U.S. Patent No. 7,861,260.

Petitioners are not aware of any other disclaimers, reexamination certificates, or current IPR petitions addressing the '398 Patent.

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

Lead Counsel	Backup counsel
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D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR58717-0006IP1@fr.com

(referencing No. 58717-0006IP1 and cc'ing PTABInbound@fr.com).

Respectfully submitted,

Dated July 18, 2025

/David L. Holt/

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter Partes* Review totals 13,618 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated July 18, 2025

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