

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Roy Shkedi <i>et al.</i>	Attorney Docket No.: 00035-0037IP1
U.S. Patent No.:	11,949,962	
Issue Date:	Apr. 2, 2024	
Appl. Serial No.:	18/202,206	
Filing Date:	May 25, 2023	
Title:	METHOD AND COMPUTER SYSTEM USING PROXY IP ADDRESSES AND PII IN MEASURING AD EFFECTIVENESS ACROSS DEVICES	

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES
PATENT NO. 11,949,962 PURSUANT TO 35 U.S.C. §§ 311–319,
37 C.F.R. § 42

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EXHIBITS

EX1001	U.S. Patent No. 11,949,962 to Shkedi (“the ’962 Patent”)
EX1002	Excerpts from the Prosecution History of the ’962 Patent (“the Prosecution History”)
EX1003	Declaration and Curriculum Vitae of Dr. Michael Mitzenmacher
EX1004	U.S. Pub. No. 2009/0172728 to Roy Shkedi <i>et al.</i> (“Shkedi-728”)
EX1005	U.S. Pub. No. 2008/0259906 to Roy Shkedi (“Shkedi-906”)
EX1006	U.S. Pub. No. 2010/0094758 to Simon Chamberlain <i>et al.</i> (“Chamberlain”)
EX1007	U.S. Pat. No. 8,566,164 to Roy Shkedi <i>et al.</i>
EX1008	Excerpt of File History of U.S. Pat. Appl. No. 11/968,117
EX1009	U.S. Pub. No. 2010/0211648 to Dirk Bhagat <i>et al.</i>
EX1010	Internet Archive Capture of https://en.wikipedia.org/wiki/Web_beacon from Aug. 24, 2010 (available at https://web.archive.org/web/20100824203358/https://en.wikipedia.org/wiki/Web_beacon)

Viant Technology LLC, Mediaocean LLC, and AppLovin Corporation (“Petitioners” or “VMA”) petition for *Inter Partes* Review (“IPR”) of claims 1-34 (“the Challenged Claims”) of U.S. Patent No. 11,949,962 (“the ’962 Patent”). Compelling evidence presented in this Petition demonstrates at least a reasonable likelihood that Petitioners will prevail with respect to at least one of the Challenged Claims.

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioners certify that the ’962 Patent is available for IPR. This petition is being filed within one year of service of the complaints against Petitioners. Petitioners are not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

B. Challenge and Relief Requested

Petitioners request an IPR of the Challenged Claims on the grounds noted below. Dr. Mitzenmacher provides supporting testimony in his Declaration. *See generally* EX1003.

Ground	Claim(s)	35 U.S.C. § 103
1	1-34	Shkedi-728 in view of Chamberlain

Reference	Publication Date
Shkedi-728	Jul. 2, 2009
Chamberlain	Apr. 15, 2010

Each of these references was published more than one year before August 3, 2011 (“Critical Date”), which is the earliest claimed priority date of the ’962 Patent. *See* EX1001, 1:9-31. Petitioners do not concede that the Challenged Claims are entitled to this priority date.

II. THE ’962 PATENT

A. Brief Description

The ’962 Patent “relates to correlating or targeting actions or activities pertaining to online devices (such as desktop computers, portable computers, tablets, mobile phones or smartphones; referred to herein as ODs) and set-top boxes (referred to herein as STBs).” EX1001, 1:35-40. The ’962 Patent describes methods “whereby television advertising delivered to a specific set-top box can be targeted based on user profile information arising from multiple online devices, only one of which needs to be directly associated with the set-top box.” EX1001, 1:41-45.

In the ’962 Patent, a “primary online device (OD1)” is associated with a set-top box (STB). EX1001, Abstract. When OD1 is near the STB, “one or more secondary online devices (OD2s) [that] are observed to be located ‘near’ the STB” are

also associated with the STB. *Id.* A television advertisement is then selected “based at least in part on profile information linked to one of the associated OD2s” and directed to the STB. *Id.*

B. Prosecution History

In the only Office Action, the Examiner rejected the claims for obviousness-type double patenting, indicating that then independent “[c]laims 115 and 136 are indicated as allowable subject matter with respect to the prior art but are rejected with respect to double patenting doctrine” EX1002, 113.

In indicating allowable subject matter, the Examiner explained:

The cited prior art references disclose generally profile and preference sharing between user devices and associating a device with a location based on connection to a specific access network. However, the prior art fails to disclose or fairly suggest, alone or in combination, all of the features of independent claims 115 and 136.

EX1002, 113-115; *see also id.*, 24-25. The Examiner did not provide any explanation of what limitations the prior art did not disclose or render obvious. *See id.*

C. Level of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA”) relating to the subject matter of the ’962 Patent as of August 3, 2011 would have possessed at least a bachelor’s degree in electrical engineering or computer science, and two years of work experience in the field of network-based computer systems, such as systems for

sending and receiving information over local networks and wide area networks (such as the Internet or World Wide Web). EX1003, ¶¶18-21. A person could also have qualified with more formal education and less technical experience, or vice versa. *Id.*

D. Claim Construction

Petitioners submit 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). As described below in Section III.A, *supra*, Shkedi-728 is a publication of an application filed by one of the named inventors of the ’962 Patent, and it includes many of the same definitions for terminology as are present in the ’962 Patent. *Compare* EX1001, 2:18-8:39 *with* EX1004, [0003]-[0033]. Accordingly, the terminology used by Shkedi-728 is consistent with the terminology used by the ’962 Patent, and the Ground set forth below would render the claims obvious under any reasonable construction. EX1003, ¶45.

Petitioners reserve the right to respond to any constructions offered by Patent Owner or adopted by the Board. Petitioners are 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 Shkedi-728 and Chamberlain renders claims 1-34 obvious

1. Shkedi-728 (EX1004)

Shkedi-728 is a publication of an application filed by one of the named inventors of the '962 Patent that published on July 2, 2009—more than one year before the Critical Date—and is therefore prior art under 35 U.S.C. § 102(b). *See* EX1004, p. 1. Shkedi-728 details the same underlying system as described in the '962 Patent.

For example, Shkedi-728 describes “systems and methods [that] enable delivery of targeted online advertisements or tracking and recording of online behavior based on television viewing or interacting behavior.” EX1004, [0047]. To achieve this, Shkedi-728 describes building a profile of a user’s interactions with both (1) their “online user interface device” and (2) their set-top box (“STB”). *See* EX1004, [0038]. “Profiles or partial profiles...can contain any quantity of profile information, such as, in one example, just an online access IP address or set-top box IP address or other STB identifier used by a person at the time his profile was collected and the identity of the profile provider.” EX1004, [0029]. “In another example, a profile can be more extensive and can include demographic or behavioral information, such as an extensive browsing history, shopping or purchase histories, content or programs viewed, and other information concerning the user’s

characteristics or the user's activities." EX1004, [0029]. "In some implementations, the profile information includes a profile identifier that is referenced or included in a tag or a cookie placed on the online access user interface device, or is related to a username or logon ID provided by the user." EX1004, [0042].

The CAS 40 uses the profile information to select advertisements delivered to computer 34 or STB 36 for presentation to a user on television 38. *See* EX1004, [0052]-[0055] ("A targeted television advertisement is selected by CAS 40 based at least in part on the delivered profile information. The targeted television advertisement is directed to the user's STB 36 via ISP 22 if modem 32 and STB 36 share the online access IP address IP_{modem} (as in FIG. 5A), or via TVP 24 using an associated set-top box identifier ID_{STB} (as in FIG. 5B)."), [0056] ("Later, when the user again accesses one or more online sites through modem 32, the profile identifier can be transmitted to CAS 40," and "CAS 40 can transmit one or more selected (i.e., targeted) online advertisements to the user's computer 34 via modem 32 at its current online access IP address or can track and record the user's online activities via modem 32 at that current online access IP address"); EX1003, ¶47. "Alternatively, the profile identifier can be transmitted to online site 50 (directly, as in FIG. 7B; or indirectly via CAS 40 or other intermediate server, not shown) or to another ad server (not shown)," and "online site 50 or the other ad server can transmit one or more selected online advertisements or selected online content to the user's

computer 34 or can track the user's online activities...." EX1004, [0057]. "The tracking of online activity that is enabled by the association of an STB identifier with an online access identifier (using an online access IP address as described above or by other methods such as those described below) can allow an advertiser to evaluate the effectiveness of the television advertising or to refine targeting criteria for the online or television advertising." EX1004, [0060].

FIG. 1 is an example of Shkedi-728's system. *See* EX1004, [0045], [0050]. In FIG. 1, "a user's modem 32 (an online access device) is connected to Internet service provider (ISP) 22 for providing online access via computer 34 (an online user interface device), and that user's STB 36 is connected to television provider (TVP) 24 for providing television service via television 38." EX1004, [0050]. Central Ad Server ("CAS") 40 is "a computer server that manages delivery of advertisements (television or online) to visitors of online sites or viewers of television programs." EX1004, [0025]; *see also id.*, [0052]-[0056]. A profile provider, such as online site 50, "cooperates with a CAS, which receives all or part of [] profile information from the profile provider for use in targeting television or online advertisements." EX1004, [0026]; *see also id.*, [0059].

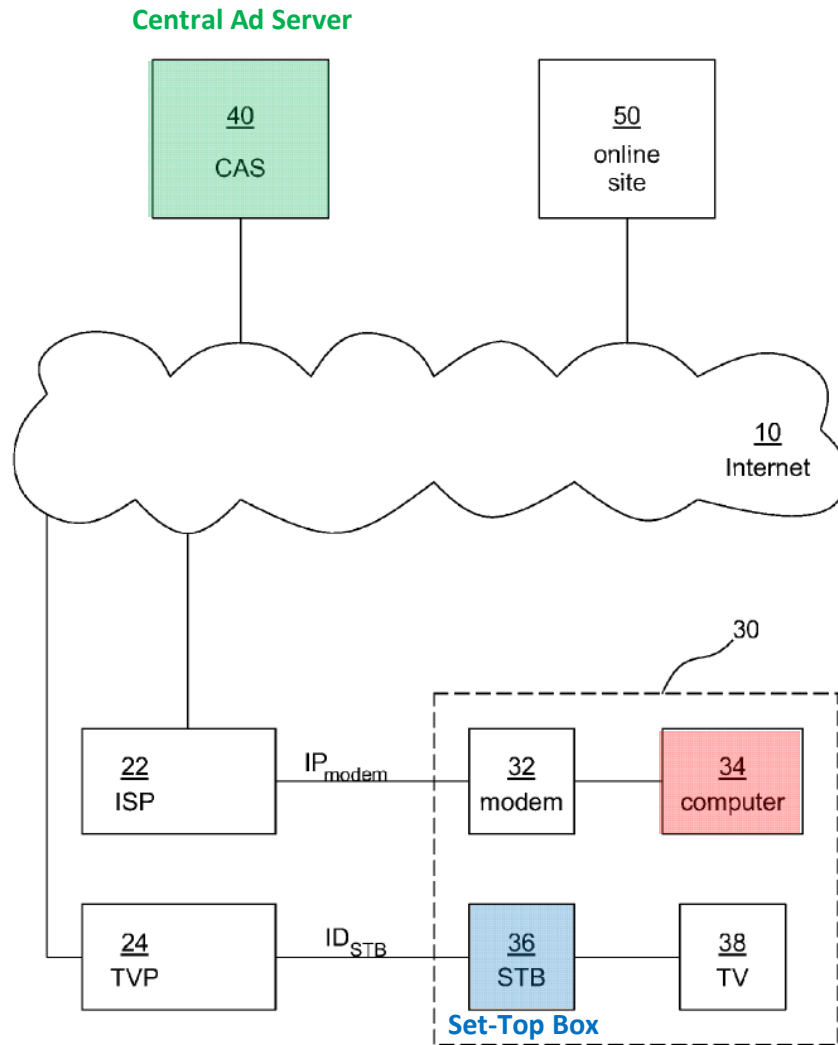


FIG. 1

EX1004, FIG. 1 (Highlighted and Annotated)

“Each STB typically is assigned an identifier [‘ID_{STB}’] of some sort by the corresponding TVP, e.g., to enable the TVP to direct specific signals or programming to a specific STB, to identify the source of requests, commands, queries, or responses received from a particular STB, or for other purposes.” EX1004, [0007]. Similarly, “[e]ach online access device typically is identified on the Internet by an

Internet Protocol address (i.e., an IP address; currently, under IPv4, an IP address comprises a sequence of four numbers each ranging from 0 to 255, i.e., a 32-bit address).” EX1004, [0014]. “At any given time, any data or content directed for online transmission to the user is directed to the online access IP address (IP_{modem}) assigned to [the] modem” through which the user’s online access device connects to the internet. EX1004, [0050]. “[T]he online access identifier [e.g., IP_{modem}] and the set-top box identifier [ID_{STB}] can be associated by each being referenced or included in the user profile.” EX1004, [0039].

According to Shkedi-728, “[v]arious schemes currently are implemented, under development, or being considered wherein [personally identifiable Information] PII is used, e.g., to target television advertisements based on a viewer’s online behavior.” EX1004, [0035]. “The PII has typically been required to make the connection between the different media, because different devices are typically employed to access each one.” EX1004, [0035]. In Shkedi-728’s system, “[t]he association between the online access IP address for the earlier online activity and the STB identifier can be established for targeting the television advertisement in any suitable way.” EX1004, [0053]. “For example, the association between the online behavior from IP_{modem} and subsequent delivery of the targeted ad to ID_{STB} can be established by: use of PII or non-PII as needed, desired, or permitted; use of a common identifier or user pseudonym for a user’s modem and set-top box

by an ISP/TVP; use of a common online access IP address used by both modem 32 and STB 36; cooperation between the ISP, TVP, and/or CAS to associate IP_{modem} and ID_{STB}, with or without using PII; and so on.” EX1004, [0053]. Yet, Shkedi-728 does not dictate or otherwise limit the manner in which PII might be used to associate an IP_{modem} and an ID_{STB}. EX1003, ¶¶45-50.

2. Chamberlain (EX1006)

Chamberlain describes “systems and methods for enabling the matching of third party data with access providers’ subscriber data....” EX1006, Abstract. Chamberlain describes various ways in which personally identifiable information (“PII”) associated with a user may be used to match the user with other information about the user, such as consumer marketing data. *See* EX1006, [0036]-[0039].

In one example, Chamberlain describes that a marketing data appliance (MDA) receives subscriber data and “performs a lookup in one or more consumer databases that contain consumer segments and other consumer data, using the subscriber data.” EX1006, [0037]. “Subscriber data may include, e.g., for each subscriber, the subscriber’s name, the subscriber’s address, a Unique ID (UID) assigned to the subscriber, or other PII of the subscriber.” EX1006, [0036]. “For example, in the case of a content provider such as a web portal..., the subscriber data

may include email addresses but not postal addresses, and the MDA 106 can access an additional data source or use data available within the MDA that will enable the MDA to use the email addresses and/or names for matching.” EX1006, [0037].¹ That is, Chamberlain describes using one or more pieces of a user’s PII to match data about the user from different sources of data. *See* EX1006, [0036]-[0039]; EX1003, ¶¶51-52.

3. The Combination, Reasons to Combine, and Expectation of Success

a) Combination of Shkedi-728 and Chamberlain

As discussed in §III.A.1, *supra*, Shkedi-728 describes that “PII has typically been required to make the connection between the different media [*e.g.*, television and online media], because different devices are typically employed to access each one.” EX1004, [0035]. “For example, the association between the online behavior from IP_{modem} and subsequent delivery of [a] targeted ad to ID_{STB} can be established by: use of PII or non-PII as needed, desired, or permitted; use of a common identifier or user pseudonym for a user’s modem and set-top box by an ISP/TVP; use of a common online access IP address used by both modem 32 and STB 36; cooperation between the ISP, TVP, and/or CAS to associate IP_{modem} and ID_{STB}, with or without using PII; and so on.” EX1004, [0053]. Shkedi-728 does not dictate or

¹ All emphases are added throughout, unless otherwise noted.

limit the manner in which PII is used to associate different devices of a user and their identifiers (*e.g.*, IP_{modem} and ID_{STB}). EX1003, ¶53.

A POSITA would have found it obvious to turn to Chamberlain for at least one obvious method for associating disparate sets of data based on a user's PII. EX1003, ¶54. As discussed in §III.A.2, *supra*, Chamberlain describes using subscriber data, such as email addresses and/or names, for matching disparate data sets associated with a user. *See* EX1006, [0036]-[0039]; EX1003, ¶54. A POSITA would have found it obvious to utilize a similar matching technique in the context of Shkedi-728's advertising system in order to associate a user's devices. EX1003, ¶54.

For example, a POSITA would have found it obvious for Shkedi-728's CAS 40, like Chamberlain's MDA, to receive from each of ISP 22 and TVP 24 a user's device information (*e.g.*, IP_{modem} and ID_{STB}) and subscriber data (*e.g.*, email addresses and/or names) in order to allow CAS 40 to associate the user's devices and achieve Shkedi-728's goal of "enabling advertisers and publishers to track the distribution of their online or television advertisements and to control the rotation and distribution of their advertisements across the Internet or television system from one location." *See* EX1004, [0025], [0053]; EX1006, [0036]-[0039]; EX1003, ¶55.

A POSITA would have been motivated to combine the teachings of Shkedi-

728 and Chamberlain in this manner for a number of reasons. EX1003, ¶56. First, Chamberlain’s matching technique provides one known method by which to achieve Shkedi-728’s goal of associating “online behavior from IP_{modem} and subsequent delivery of the targeted ad to ID_{STB}” by “cooperation between the ISP, TVP, and/or CAS to associate IP_{modem} and ID_{STB} ...using PII.” EX1004, [0053]; EX1003, ¶56. For example, by utilizing a user’s name and e-mail address provided by the user to each of the ISP and TVP, the CAS would be able to match IP_{modem} assigned by the ISP and ID_{STB} assigned by the TVP. *See* EX1006, [0037]; EX1003, ¶56.

Second, Chamberlain provides a known, concrete example of matching techniques not otherwise specified in Shkedi-728. EX1003, ¶57. As such, the Shkedi-Chamberlain combination reflects the obvious application of a known technique (Chamberlain’s subscriber data matching techniques) to similar devices (Shkedi-728’s and Chamberlain’s online advertising systems) to achieve the same type of improvement. *KSR Intern. Co. v. Teleflex Inc.*, 550 US 398, 401 (2007); EX1003, ¶57. Further, the combination would have been obvious because both references operate in the same technical field (online advertising data management), use the same infrastructure (centralized ad servers), and address the same problem (associating user identities across different access platforms). *Id.*

Likewise, a POSITA would have reasonably expected success implementing

the combination, especially since the resulting system would be implemented with conventional software and hardware techniques (*e.g.*, general-purpose processors and storage systems interconnected on well-known networks) that were well known by the Critical Date. *KSR* at 401; EX1003, ¶58. Further, the techniques integrated from Chamberlain in the Shkedi-Chamberlain combination are fully compatible with Shkedi-728's advertising system of FIG. 1. EX1003, ¶58.

4. Analysis

a) [1.pre] A method comprising:

The Shkedi-Chamberlain combination renders [1.pre] obvious. EX1003, ¶59.

Shkedi-728 describes “exemplary systems and methods [that] enable delivery of targeted online advertisements or tracking and recording of online behavior based on television viewing or interacting behavior.” EX1004, [0047], EX1003, ¶59.

b) [1.a] with a programmed hardware computer system automatically storing first electronic indicia of an association between a first online device (OD1) and a set-top box (STB) by matching (i) first personally identifiable information (PII) about a user of the OD1, which first PII is received by the computer system from a third party, with (ii) second personally identifiable information about a user of the STB; and

The Shkedi-Chamberlain combination renders [1.a] obvious. EX1003, ¶¶60-65.

As discussed in §III.A.1, *supra*, FIG. 1 is an example of Shkedi-728's system. *See* EX1004, [0045], [0050]. In FIG. 1, "a user's modem 32 (an online access device) is connected to Internet service provider (ISP) 22 for providing online access via computer 34 (an online user interface device), and that user's STB 36 is connected to television provider (TVP) 24 for providing television service via television 38." EX1004, [0050]. Central Ad Server ("CAS") 40 is "a computer server that manages delivery of advertisements (television or online) to visitors of online sites or viewers of television programs." EX1004, [0025]; *see also id.*, [0052]-[0056]. A profile provider, such as online site 50, "cooperates with a CAS, which receives all or part of [] profile information from the profile provider for use in targeting television or online advertisements." EX1004, [0026]; *see also id.*, [0059].

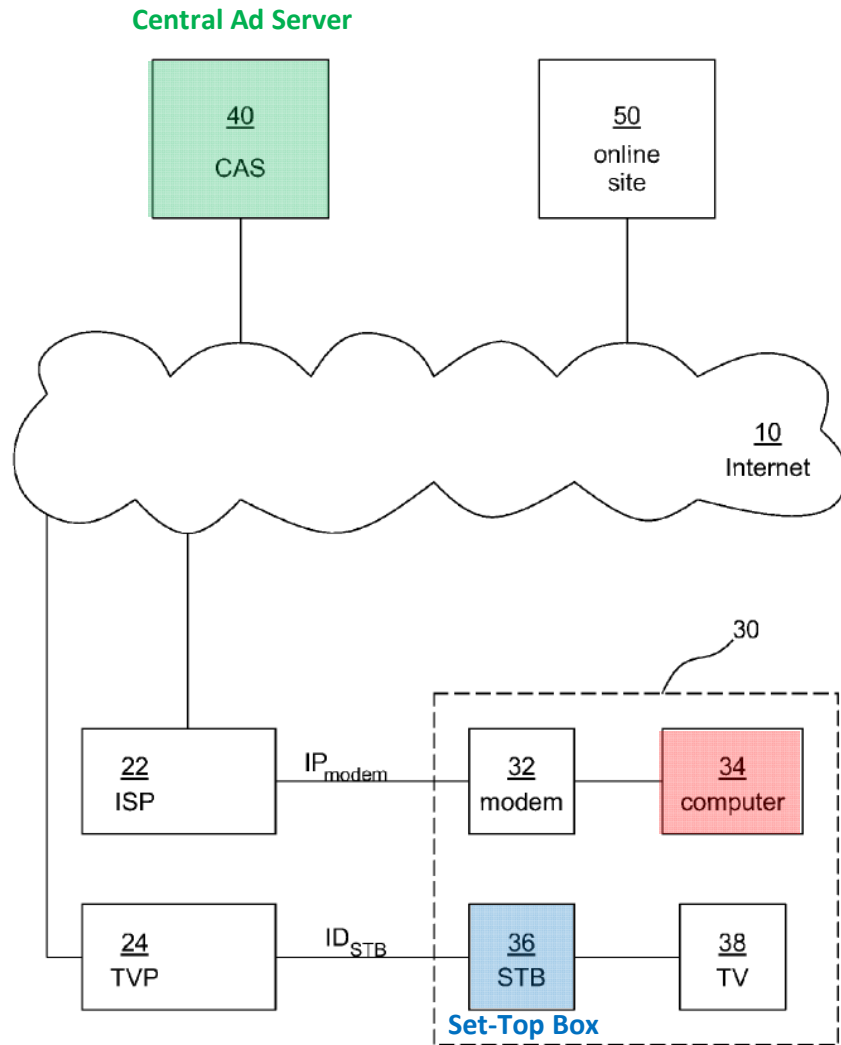


FIG. 1

EX1004, FIG. 1 (Highlighted and Annotated)

“Each STB typically is assigned an identifier [“ID_{STB}”] of some sort by the corresponding TVP, e.g., to enable the TVP to direct specific signals or programming to a specific STB, to identify the source of requests, commands, queries, or responses received from a particular STB, or for other purposes.” EX1004, [0007]. Similarly, “[e]ach online access device typically is identified on the Internet by an

Internet Protocol address (i.e., an IP address; currently, under IPv4, an IP address comprises a sequence of four numbers each ranging from 0 to 255, i.e., a 32-bit address).” EX1004, [0014]. “At any given time, any data or content directed for online transmission to the user is directed to the online access IP address (IP_{modem}) assigned to [the] modem” through which the user’s online access device connects to the internet. EX1004, [0050]. “[T]he online access identifier [e.g., IP_{modem}] and the set-top box identifier [e.g., ID_{STB}] can be associated by each being referenced or included in the user profile.” EX1004, [0039].

According to Shkedi-728, “[v]arious schemes currently are implemented, under development, or being considered wherein [personally identifiable Information] PII is used, e.g., to target television advertisements based on a viewer’s online behavior.” EX1004, [0035]. “The PII has typically been required to make the connection between the different media, because different devices are typically employed to access each one.” EX1004, [0035]. “The association between the online access IP address for the earlier online activity and the STB identifier can be established for targeting the television advertisement in any suitable way.” EX1004, [0053]. “For example, the association between the online behavior from IP_{modem} and subsequent delivery of the targeted ad to ID_{STB} can be established by: use of PII or non-PII as needed, desired, or permitted; use of a common identifier or user pseudonym for a user’s modem and set-top box by an ISP/TVP; use of a

common online access IP address used by both modem 32 and STB 36; cooperation between the ISP, TVP, and/or CAS to associate IP_{modem} and ID_{STB}, with or without using PII; and so on.” EX1004, [0053].

As discussed in §III.A.3, *supra*, it would have been obvious to a POSITA to utilize the matching techniques described by Chamberlain to associate IP_{modem} and ID_{STB} in Shkedi-728’s system. EX1003, ¶¶60-63. For example, a POSITA would have found it obvious for Shkedi-728’s CAS 40, like Chamberlain’s MDA, to receive from each of ISP 22 and TVP 24 a user’s device information (*e.g.*, IP_{modem} and ID_{STB}) and subscriber data (*e.g.*, email addresses and/or names) in order to allow CAS 40 to associate the user’s devices and achieve Shkedi-728’s goal of “enabling advertisers and publishers to track the distribution of their online or television advertisements and to control the rotation and distribution of their advertisements across the Internet or television system from one location.” *See* EX1004, [0025], [0053]; EX1006, [0036]-[0039]; EX1003, ¶63.

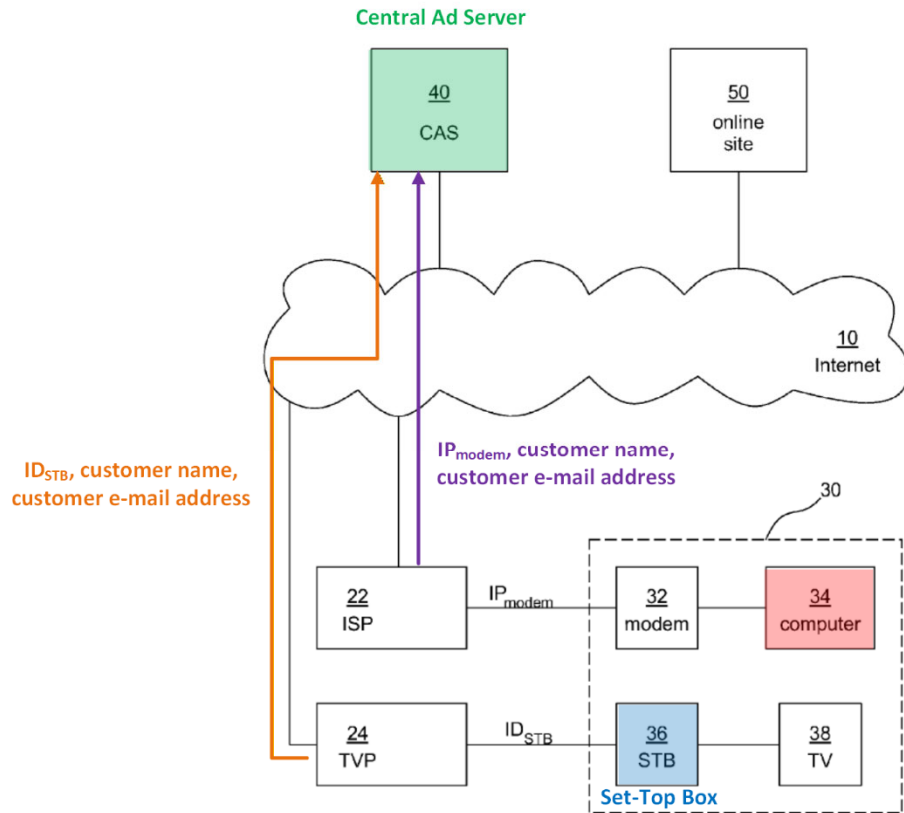


FIG. 1

EX1004, FIG. 1 (Modified and Annotated)

In Shkedi-Chamberlain, one obvious implementation would have been for each of the ISP 22 and TVP 24 to cooperate with CAS 40 (*see* EX1004, [0053]) to send a customer's device ID and PII in order to allow the CAS 40 to match the device IDs consistent with the teachings of Chamberlain (*see* EX1006, [0036]-[0037]). EX1003, ¶64. For example, the CAS 40 would have utilized the customer's name and e-mail address—which would be the same for each of ISP 22 and TVP 24—to determine that IP_{modem} and ID_{STB} correspond to the same customer. EX1003, ¶64. Indeed, Chamberlain describes that “an access provider such

as an ISP or a content provider such as a web portal can submit its subscriber data to a marketing data appliance (MDA),” and the MDA “uses the personally identifiable data within the subscriber data to find matching consumer or business data, for example, consumer or business segments that represent previously collected or modeled consumer attitudinal, habit, and/or financial data.” EX1006, [0007]; *see also* EX1004, [0067] (describing a ISP/TVP 22/24 periodically transmitting user information, such as IP addresses or STB identifiers, to CAS 40 in order to facilitate personalized advertisement placement and behavior tracking).

Accordingly, Shkedi-Chamberlain would have, ***with a programmed hardware computer system*** [e.g., CAS 40], ***automatically stor[ed] first electronic indicia of an association*** [e.g., a profile for a user] ***between a first online device (OD1)*** [e.g., the user’s computer 34] ***and a set-top box (STB)*** [e.g., the user’s STB 36] ***by matching (i) first personally identifiable information (PII) about a user of the OD1, which first PII is received by the computer system from a third party*** [e.g., the user’s name, e-mail address, and IP_{modem} received from ISP 22], ***with (ii) second personally identifiable information about a user of the STB*** [e.g., the user’s name, e-mail address, and ID_{STB} received from TVP 24].² EX1003, ¶65.

c) [1.b.i] with the computer system automatically measuring effectiveness of an advertisement displayed via the STB by tracking user behavior performed on a second online device

² Claim language is presented in bold and italics throughout.

(OD2) following delivery of the advertisement, based on an association between the OD2 and the STB,

The Shkedi-Chamberlain combination renders [1.b.i] obvious. EX1003, ¶¶66-71.

Shkedi-728 describes that “[t]racking and recording user behavior in one medium in response to observed behavior in another... enable[s] an advertiser to target future ads more accurately, to evaluate the effectiveness of particular ads or ad campaigns, or for other purposes.” EX1004, [0036]. “The tracking of online activity that is enabled by the association of an STB identifier with an online access identifier (using an online access IP address as described above...) can allow an advertiser to evaluate the effectiveness of the television advertising or to refine targeting criteria for the online or television advertising.” EX1004, [0060].

“Other observed viewer behavior can also be derived from analysis of user habits in selecting TV programs, which selections can be used in deciding what TV ad to deliver or avoid delivering to the user, and this type of interaction too can be used for the purposes described herein, namely custom delivery of online advertisements or decisions to record online behavior to measure the effectiveness of the TV ads.” EX1004, [0061]. In other words, Shkedi-728 describes tracking a user’s online behavior after a TV ad has been delivered to a user’s STB in order to “measure the effectiveness of the TV ads.” *See id.*; EX1003, ¶¶67.

While Shkedi-728's FIG. 1 only shows a single computer 34, Shkedi-728 describes that, "[i]n some...implementations, more than one online user interface device can share an IP address." EX1004, [0083]. Specifically, "[m]odem 32 can include a router to route network traffic properly among the user's computer (or computers or other devices) 34...." EX1004, [0070]. For example, one of the online user interface devices can be "a mobile device (e.g., an Internet-enabled cellphone, handset, PDA, or laptop computer) that is intermittently disconnected from modem 32 and is connected to the Internet through another connection (e.g., another LAN, a wireless hotspot, or a cell phone network, as in FIG. 9)." EX1004, [0086]. In these instances, all of the user's online user interface devices would be tracked as part of the CAS's profile. *See* EX1004, [0083]-[0086]; EX1003, ¶68.

Indeed, Shkedi-728 "incorporate[s] by reference as if fully set forth herein" U.S. Appl. No. 11/736,544 filed Apr. 17, 2007. EX1004, [0002].³ This application published as U.S. Pub. No. 2008/0259906 (EX1005) ("Shkedi-906"). *See*

³ Shkedi-728 includes a typographical error, identifying U.S. Appl. No. 11/736,544 as "U.S. non-provisional application Ser. No. 11/736,286." EX1004, [0002].

However, this error was corrected during prosecution of Shkedi-728 to properly identify U.S. Appl. No. 11/736,544, as demonstrated by the patent that issued from Shkedi-728 (i.e., U.S. Pat. No. 8,566,164). *See* EX1007, 1:12-15 ("Systems or

EX1005, p. 1. Shkedi-906's incorporated disclosure describes that "[t]he delivery end-point [of a television ad] may be one television set or multiple sets of a given user; likewise, online access may involve one or more computers or other online interface devices of a given user." EX1005, [0039]. Shkedi-906 further states that "the CAS database can be searched to find all the 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 using the same LAN." EX1005, [0063]. "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 or by placing linking codes or information identifying the linked devices within the identifiers (cookies) of each of the devices along with the date and time the association was created." EX1005, [0063].

Returning to Shkedi-728's discussion of measuring the effectiveness of the TV ads, the CAS 40 would have been able to track a user's online behavior after a

methods disclosed herein may be related to U.S. non-provisional application Ser. No. 11/736,544 filed Apr. 17, 2007, which application is hereby incorporated by reference as if fully set forth herein."); EX1008 (preliminary amendment correcting the application number).

TV ad has been delivered to a user's STB across any and all of a user's online user interface devices. See EX1004, [0060]-[0061], [0083]-[0086]; EX1005, [0063].

Accordingly, Shkedi-Chamberlain would have, *with the computer system* [e.g., CAS 40] *automatically measur[ed] effectiveness of an advertisement displayed via the STB by tracking user behavior performed on a second online device (OD2)* [e.g., another of the user's online user interface devices beyond computer 34, such as a mobile device] *following delivery of the advertisement, based on an association between the OD2 and the STB* [e.g., the user's profile stored by CAS 40 includes an association between the user's STB through ID_{STB} and the user's online user interfaces devices—including, for example, computer 34 and a mobile device—via their shared IP_{modem}]. EX1003, ¶71.

d) [1.b.ii] which association has been determined using both (i) the first electronic indicia of the association between the OD1 and the STB stored pursuant to part (a), and (ii) stored second electronic indicia of an association between the OD2 and the OD1, which have been associated based on use by the OD1 of a common proxy IP address and based on use by the OD2 of the common proxy IP address, wherein the common proxy IP address is an IP address through which network traffic of the OD1 and the OD2 was routed,

The Shkedi-Chamberlain combination renders [1.b.ii] obvious. EX1003, ¶¶72-75.

The '962 Patent does not define the term "common proxy IP address." EX1003, ¶72. However, the '962 Patent describes that, "[o]ver time, one or more

secondary online devices (OD2s) are observed to be located ‘near’ the STB proxy location (i.e., the location of OD1 at the time it was estimated to be ‘near’ the subscriber’s STB).” EX1001, 16:35-38. “In one example, OD2 being located ‘near’ the STB proxy location can be estimated by OD1 and OD2 sharing a common LAN (at least transiently).” EX1001, 16:66-17:1. “In one case of this example, OD1 is estimated to be ‘near’ an associated residential STB (in any of the ways described above), and the IP address (or part of the IP address, such as an IP address prefix) used by OD1 at the time of the estimate is used as a proxy for the STB location.” EX1001, 17:1-6. Accordingly, one example of user interface devices using a “common proxy IP address” would occur when they utilize the same IP address and one of the online user interface devices was previously associated with an STB. EX1003, ¶72.

As described above for [1.a], *supra*, CAS 40 would have utilized PII provided by each of ISP 22 and TVP 24 to associate the user’s computer 34 (identified by IP_{modem}, through which computer 34 accesses the Internet) and the user’s STB 36 (identified by ID_{STB}) in a user profile. *See* EX1004, [0053]; EX1006, [0036]-[0037]; EX1003, ¶73. And, as described above for [1.b.i], *supra*, Shkedi-728 and the incorporated Shkedi-906 both teach that the user may have multiple online user interface devices, all connected, at least temporarily, to the Internet through the same modem 32, and thus sharing the same IP address. *See* EX1004, [0071] (“In

this implementation the term ‘common IP address’ denotes the IP address of a modem 32 or other online access device to which remote network traffic is routed for all of the multiple devices sharing a common connection to the remote network (Internet 10) through that modem”), [0084]-[0086]; EX1005, [0049], [0063]-[0064]; EX1003, ¶73.

Shkedi-906 further states that “the CAS database can be searched to find all the 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 using the same LAN.” EX1005, [0063]. “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 or by placing linking codes or information identifying the linked devices within the identifiers (cookies) of each of the devices along with the date and time the association was created.” EX1005, [0063]. In other words, multiple of a user’s online user interface devices can share a common IP address on a LAN that is co-located with the STB. EX1003, ¶74. In this regard, the “same IP address” described by Shkedi-906 is a “common proxy IP address,” as that term is used in the ’962 Patent. *See* EX1001, 16:35-17:20; EX1005, [0063]; EX1004, [0070]-[0071]; EX1003, ¶74.

Accordingly, in Shkedi-Chamberlain, the ***association has been determined using both (i) the first electronic indicia of the association between the OD1 and***

the STB stored pursuant to part (a) [e.g., the association between ID_{STB} and IP_{modem} determined by CAS 40 based on the PII provided by ISP 22 and TVP 24], *and (ii) stored second electronic indicia of an association between the OD2 and the OD1, which have been associated based on use by the OD1 of a common proxy IP address and based on use by the OD2 of the common proxy IP address* [e.g., all online user interface devices—including, for example, computer 34 and a mobile device—that are connected to modem 32 and therefore share IP_{modem} are associated with the user by CAS 40 and tracked using the user’s profile stored by CAS 40], *wherein the common proxy IP address is an IP address through which network traffic of the OD1 and the OD2 was routed* [e.g., IP_{modem} is “the IP address of a modem 32 or other online access device to which remote network traffic is routed for all of the multiple devices sharing a common connection to the remote network (Internet 10) through that modem”]. EX1003, ¶75.

e) [1.b.iii] wherein the association between the OD1 and the OD2 has been determined by a computer system located outside a local area network (LAN) defined by the common proxy IP address.

The Shkedi-Chamberlain combination renders [1.b.iii] obvious. EX1003, ¶¶76-78.

Shkedi-728 describes that “a router can be employed to connect a local area network (LAN) to the Internet, thereby enabling online user interface devices connected to the LAN to share a connection to the Internet through the router.”

EX1004, [0015]. “The router receives data from devices on the LAN and transmits them to the Internet directed to their corresponding destinations, and receives data from the Internet and directs them to the corresponding devices on the LAN.”

EX1004, [0015]. Modem 32 can include a router and create a LAN for the devices that gain access to the Internet 10 through it. *See* EX1004, [0050], [0070] (“Modem 32 can include a router to route network traffic properly among the user’s computer (or computers or other devices) 34 and the user’s STB 36”), [0071];

EX1003, ¶76.

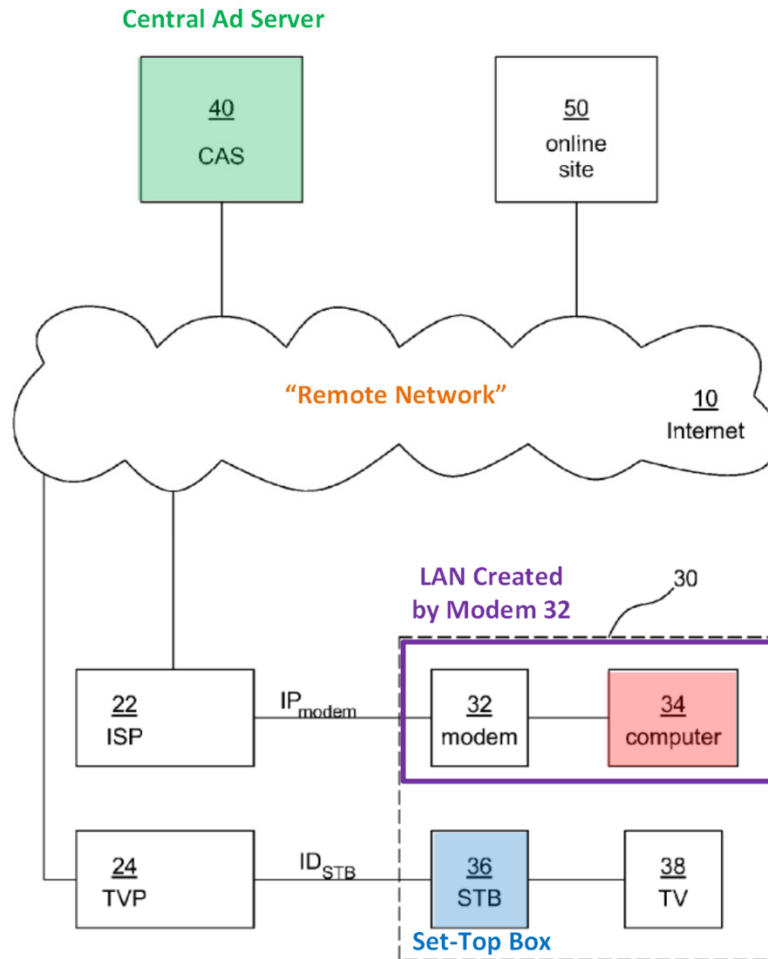


FIG. 1

EX1004, FIG. 1 (Annotated)

As shown in FIG. 1, CAS 40 is outside the LAN created by modem 32 and is connected to modem 32 through Internet 10. *See* EX1004, FIG. 1; EX1003, ¶77. That is, the CAS 40 is across the Internet from the LAN created by modem 32. *See* EX1004, [0013] (a “user interface device used to access a remote network such as the Internet”); EX1003, ¶77. This facilitates the CAS 40 acting as a “central ad server” that serves many disparately located online user interface devices. *See*

EX1004, [0025] (defining a “CAS” and explaining that the “remote ad server acts as a central conduit for delivering advertisements, enabling advertisers and publishers to track the distribution of their online or television advertisements and to control the rotation and distribution of their advertisements across the Internet or television system from one location”); EX1003, ¶77. Alternatively, Shkedi-728 describes that other entities, such as a TSP/ISP (*see* EX1004, [0068]) or an online site 50 (*see* EX1004, [0078] (describing online site 50 as storing the common identifier information)—both of which are outside the LAN created by modem 32—may associate common IP addresses shared by multiple devices. EX1003, ¶77.

Accordingly, in Shkedi-Chamberlain, *the association between the OD1* [e.g., a user’s computer 34] *and the OD2* [e.g., a user’s mobile device that has been connected to modem 32 at a contemporaneous point in time] *has been determined by a computer system* [e.g., CAS 40, a ISP, an TSP, or an online site 50] *located outside a local area network (LAN) defined by the common proxy IP address* [e.g., CAS 40, ISP 22, TSP 24, and online site 50 are all outside of the LAN created by modem 32]. EX1003, ¶78.

f) [2] The method of claim 1 further comprising the computer system causing the advertisement to be displayed via the STB.

The Shkedi-Chamberlain combination renders [2] obvious. EX1003, ¶¶79-80.

Shkedi-728 describes that “users might be chosen that have STBs with an operating system, software, or hardware capable of accepting TV ads from a CAS.” EX1004, [0049]. Specifically, Shkedi-728 describes “[a] targeted television advertisement is selected by CAS 40 based at least in part on the delivered profile information.” EX1004, [0052]. “The advertisement can be pre-stored on CAS 40 and transmitted directly from CAS 40 to the user’s STB 36 (as in FIGS. 5A and 5B).” EX1004, [0054]. Further, “CAS 40, online site 50, or another profile provider can transmit (directly or indirectly) to STB 36 instructions to provide a notification when the targeted television advertisement is presented on the user’s television 38....” EX1004, [0055]; *see also id.*, [0065] (“The STB 36 can monitor presentation of a television advertisement (targeted or not) on the user’s television 38, or interaction of the user with an interactive television advertisement, and can transmit a notification of the same to CAS 40 (as in FIG. 6A or 6B, as appropriate) or to an online site 50 (as in FIG. 6C or 6D, as appropriate), along with the STB identifier...”).

Accordingly, in Shkedi-Chamberlain, *the computer system* [e.g., CAS 40] *caus[es] the advertisement to be displayed via the STB* [e.g., CAS 40 transmits that advertisement to the user’s STB for display]. EX1003, ¶80.

g) [3] The method of claim 1 wherein the user behavior performed on the OD2 takes place when the OD1 is not connected to the LAN.

The Shkedi-Chamberlain combination renders [3] obvious. EX1003, ¶¶81-83.

As discussed for [1.b.i], *supra*, “[i]n some of such implementations, more than one online user interface device can share an IP address.” EX1004, [0083]. Shkedi-728 describes that “the user’s online access and STB IP addresses are associated, the association can in some instances be maintained even if the online user interface device 34 is a mobile device (e.g., an Internet-enabled cell phone, handset, PDA, or laptop computer) that is intermittently disconnected from modem 32 and is connected to the Internet through another connection (e.g., another LAN, a wireless hotspot, or a cell phone network, as in FIG. 9).” EX1004, [0086]. While OD1 was described as a “computer 34” with respect to Claim 1, Shkedi-728’s system was configured such that “computer 34”—as well as any other of the user’s online user interface devices—could be any type of computing device, including a mobile device. *See id.*; *see also id.*, [0013] (“Online user interface device—any user interface device used to access a remote network such as the Internet, including but not limited to a cell phone or mobile handset, a personal digital assistant (PDA), or a networked computer (desktop, workstation, notebook, laptop, or other).”); EX1003, ¶81.

The incorporated Shkedi-906 teaches that, “[o]nce the association is created, profile information (both behavioral and demographic) collected about the computers and mobile devices before and after the association was created could be used to target ads to the STB, regardless of the IP addresses used by the computers and mobile devices (such as cell phones) to access the web at the time the profiles were collected.” EX1005, [0064]. In other words, the time at which associations are made or at which devices are connected to modem 32 does not dictate the ability of CAS 40 to track user behavior. *See* EX1004, [0075] (“It may often happen that a user accesses the Internet through modem 32 only a substantial time interval after transmission of the notification to CAS 40 or online site 50”); EX1005, [0064]-[0066]; EX1003, ¶82.

Accordingly, at certain example times in Shkedi-Chamberlain, *the user behavior performed on the OD2 takes place when the OD1 is not connected to the LAN*. EX1003, ¶83.

h) [4] The method of claim 1 wherein the common proxy IP address is a dynamically assigned IP address.

The Shkedi-Chamberlain combination renders [4] obvious. EX1003, ¶¶84-85.

Shkedi-728 describes that “IP_{modem} can be static, but it is more typically the case that IP_{modem} is dynamic, and changes from time to time as each new online access IP address is assigned to the user’s modem 32 (by DHCP or other suitable

means).” EX1004, [0050]. “As IP addresses or STB identifiers are dynamically assigned and reassigned, ISP/TVP 22/24 reports updated online access IP addresses or STB identifiers to CAS 40 (as in FIG. 8A or 8B).” EX1004, [0067].

Accordingly, Shkedi-Chamberlain discloses that *the common proxy IP address is a dynamically assigned IP address*. EX1003, ¶85.

i) [5] The method of claim 4 further comprising with the computer system undoing the association between the OD2 and the STB based on lack of use of the common proxy IP address by the OD2 for a predetermined period of time.

The Shkedi-Chamberlain combination renders [5] obvious. EX1003, ¶¶86-88.

Shkedi-728 describes that, “[i]f the STB/ad database is updated periodically, the periodic interval is preferably sufficiently small relative to the typical or average time interval between reallocation of IP addresses to keep the probability that a database matching the current common IP address does not correspond to the STB 36 connected the modem 32.” EX1004, [0079]. “The STB/ad database can be updated or purged on any desired schedule, so that it can cover an immediately preceding time period of hours, days, weeks, or some other suitable or desired time period.” EX1004, [0079]. In other words, in order to ensure that common IP addresses are in current use by the user’s devices, CAS 40 can periodically purge the STB/ad database and its associations at periods relevant to IP address reallocation. *See* EX1004, [0079]. If a user interface device does not thereafter join modem

32's LAN again, it would have at least been obvious for the association to remain purged (*i.e.*, "undone"). EX1003, ¶86.

Further, Shkedi-906 describes that the "list of common IP addresses can be purged." EX1005, [0056]. "The STB can be employed to set privacy options, thereby enabling the user to control at least partly if and how TV advertisements are targeted." EX1005, [0056]. "For example, the user might choose whether or not, or for how long, the CAS or STB will record and retain the IP addresses assigned to the user's modem, or can choose to erase all presently stored IP address data." EX1005, [0056]. A POSITA would have at least found obvious that Shkedi-906's disclosure of a user choosing "how long" an IP address is retained means that, besides being done at preset intervals (which is discussed in paragraph [0079] of Shkedi-728), Shkedi-906 discloses it can also be done for certain amounts of time selected by the user. *See* EX1004, [0079]; EX1005, [0056]. Thus, the CAS 40 can purge the database, and it would have been obvious (if not outright disclosed by the "any desired schedule" language) that the CAS 40 can undo the association after a predetermined amount of time. *See id.* From these teachings, it would have been obvious that the association via the common IP address could be "undone" as part of the periodic purge based on the common IP address no longer being in use for a period of time. EX1003, ¶87.

Accordingly, it would have been obvious in Shkedi-Chamberlain, *with the computer system* [e.g., CAS 40] *undoing the association between the OD2 and the STB based on lack of use of the common proxy IP address by the OD2 for a predetermined period of time* [e.g., purging the database profile of associations based on common IP addresses based on a user-defined period, such as a certain period of inactivity]. EX1003, ¶88.

j) *[6] The method of claim 1 further comprising with the computer system undoing the association between the OD2 and the STB based on receipt of a user opt-out.*

The Shkedi-Chamberlain combination renders [6] obvious. EX1003, ¶¶89-91.

Shkedi-728 describes that, “[f]rom a privacy perspective, there is an advantage to using extra identifiers placed by CAS 40 on STB 36, modem 32, or computer 34, because that can enable the user to control the extra identifiers and set privacy settings to match user preference.” EX1004, [0080]. “A user may, for example, erase an extra identifier, alter an extra identifier to inform the CAS the next time it is in communication that the user is not interested in targeted ads, interested only in ads targeting behavior from the last seven days, interested in ads in certain categories only, or interested in all types of ads except for certain excluded

categories (e.g., adult content).” EX1004, [0080]. In other words, Shkedi-728 describes a user being able to “opt-out” from targeted ads and erase identifiers stored by CAS 40. EX1003, ¶89.

Shkedi-906 describes that “privacy can be enhanced...by storing the common IP addresses (and corresponding times and dates) locally on the STB, instead of on the CAS, so the only device that monitors the different IP addresses assigned to the same access device is the STB.” EX1005, [0056]. “If stored, whether on the STB, on the CAS, or elsewhere, the list of common IP addresses can be purged.” EX1005, [0056]. “Purging of the IP addresses can be done periodically, at any suitable time interval, and can be manual or automated.” EX1005, [0056]. “The STB can be employed to set privacy options, thereby enabling the user to control at least partly if and how TV advertisements are targeted.” EX1005, [0056]. “For example, the user might choose whether or not, or for how long, the CAS or STB will record and retain the IP addresses assigned to the user’s modem, or can choose to erase all presently stored IP address data.” EX1005, [0056].

Accordingly, it would have been obvious in Shkedi-Chamberlain, *with the computer system* [e.g., CAS 40] *undoing the association between the OD2 and the STB based on receipt of a user opt-out* [e.g., purging a user’s profile and the association contained therein as a result of a user indicating they are not interested in targeted ads]. EX1003, ¶91.

k) [7] The method of claim 1 wherein the stored second electronic indicia of an association between the OD2 and the OD1 is based on the use by the OD2 of the common proxy IP address, as recorded in an electronic record, before the use by the OD1 of the common proxy IP address.

The Shkedi-Chamberlain combination renders [7] obvious. EX1003, ¶¶92-94.

Shkedi-728 teaches that “[t]he relations or electronic associations can include one or more of (i) an earlier online access identifier and a later set-top box identifier, (ii) an earlier set-top box identifier and a later online access identifier, or (iii) contemporaneous online access and set-top box identifiers.” EX1004, [0048]. “Such differing relations and associations can become necessary, e.g., as IP addresses are assigned and reassigned under DHCP.” EX1004, [0048]. This flexibility in the timing of associations would have been equally true of the associations between multiple online user interface devices, as well. EX1003, ¶92.

Further, Shkedi-906 teaches that, “[o]nce the association is created, profile information (both behavioral and demographic) collected about the computers and mobile devices before and after the association was created could be used to target ads to the STB, regardless of the IP addresses used by the computers and mobile devices (such as cell phones) to access the web at the time the profiles were collected.” EX1005, [0064].

From these teachings, it would have been obvious that, in Shkedi-Chamberlain, *the stored second electronic indicia of an association between the OD2 and the OD1 is based on the use by the OD2 of the common proxy IP address, as recorded in an electronic record, before the use by the OD1 of the common proxy IP address.* EX1003, ¶94.

l) [8] The method of claim 1 wherein the second PII about a user of the STB is received from a television provider (TVP) that provides television service to the STB.

The Shkedi-Chamberlain combination renders [8] obvious. EX1003, ¶¶95-96.

As discussed for [1.a], *supra*, one obvious implementation of Shkedi-Chamberlain would have been for each of the ISP 22 and TVP 24 to cooperate with CAS 40 (*see* EX1004, [0053]) to send a customer's device ID and PII in order to allow the CAS 40 to match the device IDs consistent with the teachings of Chamberlain (*see* EX1006, [0036]-[0037]). EX1003, ¶95. For example, the CAS 40 would have utilized the customer's name and e-mail address—which would be the same for each of ISP 22 and TVP 24—to determine that IP_{modem} and ID_{STB} correspond to the same customer. EX1003, ¶95.

Accordingly, in Shkedi-Chamberlain, *the second PII about a user of the STB [e.g., name, e-mail address, and ID_{STB}] is received from a television provider*

(TVP) that provides television service to the STB [e.g., CAS 40 receiving the second PII from TVP 24]. EX1003, ¶96.

m) [9] The method of claim 1 wherein the second PII about a user of the STB is received from the STB.

The Shkedi-Chamberlain combination renders [9] obvious. EX1003, ¶¶97-99.

Shkedi-728 describes that “STB 36 can periodically contact a CAS 40 (or multiple CASs)” to provide the CAS 40 with identification information (e.g., IP_{modem}, when STB 36 is connected to modem 32). *See* EX1004, [0070]. Shkedi-728 further describes that, on behalf of a television advertiser or other profile provider, CAS 40 can “request, via...STB 36, permission to contact the user by telephone, electronic mail, or postal mail, and can additionally request the user's preferred means of communication.” EX1004, [0082]. “Such contact would typically require PII.” EX1004, [0082]. “If the viewer grants permission, that permission can become part of the profile information, along with any additional profile information collected in the course of the subsequent contact.” EX1004, [0082].

Accordingly, it would have at least been obvious to have the STB 36 (e.g., at the direction of the TVP 24 during assignment of ID_{STB}) provide the necessary PII to CAS 40 to facilitate the association, instead of TVP 24. EX1003, ¶98. Having the STB 36 provide the name, e-mail address, and ID_{STB} would have distributed the work of such communications to many STBs, and reduced the likelihood that the

TVP 24 would become a bottleneck. EX1003, ¶98. Further, having the STB 36 provide this PII would have provided the user of STB 36 an opportunity to decline provision of the PII, enhancing privacy consistent with the goals of Shkedi-728. *See, e.g.*, EX1004, [0080] (describing a desire to “enable the user to...set privacy settings to match user preference”); EX1003, ¶98.

Accordingly, it would have been obvious that, in Shkedi-Chamberlain, *the second PII about a user of the STB is received from the STB*. EX1003, ¶99.

n) [10] The method of claim 1 wherein the first PII comprises an email address.

The Shkedi-Chamberlain combination renders [10] obvious. EX1003, ¶¶100.

Shkedi-728 teaches that “Personally Identifiable Information (PII)” is “information that can be used to identify a specific person, including but not limited to: name, Social Security number (SSN), date of birth, street address, email address, static IP address (if any), phone number (home, work, wireless), financial account numbers (bank accounts, credit accounts, or any other financial data), driver's license number, vehicle registration number, vehicle license number, facial photographs, fingerprints, handwriting or signature, or any other information that can assist in identifying a specific person.” EX1004, [0030].

o) [11] The method of claim 1 wherein the first PII comprises a user name.

The Shkedi-Chamberlain combination renders [11] obvious. EX1003,

¶¶101.

Shkedi-728 teaches that “Personally Identifiable Information (PII)” is “information that can be used to identify a specific person, including but not limited to: name, Social Security number (SSN), date of birth, street address, email address, static IP address (if any), phone number (home, work, wireless), financial account numbers (bank accounts, credit accounts, or any other financial data), driver's license number, vehicle registration number, vehicle license number, facial photographs, fingerprints, handwriting or signature, or any other information that can assist in identifying a specific person.” EX1004, [0030].

p) [12] The method of claim 1 wherein the first PII is received by the computer system as a result of a redirection of the OD1 by equipment of a third party.

The Shkedi-Chamberlain combination renders [12] obvious. EX1003,

¶¶102-103.

Shkedi-728 describes that “[p]rofiles or partial profiles provided by a profile provider to a CAS can contain any quantity of profile information.” EX1004, [0029]. “In some instances a profile includes PII...” EX1004, [0029]. The information in these profiles can be “obtained by the CAS when a user engages in any online or television activity or provides an item of demographic information and is redirected by a profile provider to the CAS.” EX1004, [0029].

Accordingly, in Shkedi-Chamberlain, *the first PII* [e.g., the user's name, e-mail address, and IP_{modem}] *is received by the computer system* [e.g., CAS 40] *as a result of a redirection of the OD1 by equipment of a third party* [e.g., the user's computer 34 being redirected by a profile provider to provide profile information to CAS 40]. EX1003, ¶103.

q) [13] The method of claim 12 wherein the redirection of the OD1 occurs as a result of a user of the OD1 logging into a third-party website.

The Shkedi-Chamberlain combination renders [13] obvious. EX1003, ¶¶104-105.

As discussed for [12], Shkedi-728 describes that “[p]rofiles or partial profiles provided by a profile provider to a CAS can contain any quantity of profile information.” EX1004, [0029]. “In some instances a profile includes PII...” EX1004, [0029]. The information in these profiles can be “obtained by the CAS when a user engages in any online or television activity or provides an item of demographic information and is redirected by a profile provider to the CAS.” EX1004, [0029]. “Examples of profile providers can include, but are not limited to, any entity that owns or uses: (1) a visited Internet site server;...[or] (6) a server recording an activity conducted from an online user interface device such as a click on an ad or a link to an ad, a viewing of an ad, a click on a link to particular content, a search, a request for product information, receipt of particular content, a

product purchase, a telephone call made, or any other selected and definable user activity....” EX1004, [0027]. For example, “when the user again accesses one or more online sites through modem 32, the profile identifier can be transmitted to CAS 40 (e.g., by reading the cookie or tag stored by computer 34, or by receiving a username, login name, or other suitable online access identifier).” EX1004, [0056].

Accordingly, in Shkedi-Chamberlain, *the redirection of the OD1 occurs as a result of a user of the OD1 logging into a third-party website* [e.g., the user logging into the profile provider’s Internet site]. EX1003, ¶105.

r) [14] The method of claim 12 wherein the OD1 is redirected directly to the computer system.

The Shkedi-Chamberlain combination renders [14] obvious. EX1003, ¶¶106-107.

As discussed for [12], Shkedi-728 describes that “[p]rofiles or partial profiles provided by a profile provider to a CAS can contain any quantity of profile information.” EX1004, [0029]. “In some instances a profile includes PII...” EX1004, [0029]. The information in these profiles can be “obtained by the CAS when a user engages in any online or television activity or provides an item of demographic information and is redirected by a profile provider to the CAS.” EX1004, [0029]. Shkedi-909 teaches that “reported IP address data need not be transmitted directly to CAS 40; instead it can be transmitted to an intermediate

server (e.g., hosted by an ISP, cable company, or telecom company).” EX1005, [0058]. In other words, communication with CAS 40 can be either direct or indirect. EX1003, ¶106.

Accordingly, in at least some implementations of Shkedi-Chamberlain, *the OD1* [e.g., computer 34] *is redirected directly to the computer system* [e.g., redirected directly to CAS 40]. EX1003, ¶1-7.

s) [15] The method of claim 12 wherein the OD1 is redirected indirectly to the computer system via one or more intermediary servers.

The Shkedi-Chamberlain combination renders [15] obvious. EX1003, ¶¶108-109.

As discussed for [12], Shkedi-728 describes that “[p]rofiles or partial profiles provided by a profile provider to a CAS can contain any quantity of profile information.” EX1004, [0029]. “In some instances a profile includes PII...” EX1004, [0029]. The information in these profiles can be “obtained by the CAS when a user engages in any online or television activity or provides an item of demographic information and is redirected by a profile provider to the CAS.” EX1004, [0029]. Shkedi-909 teaches that “reported IP address data need not be transmitted directly to CAS 40; instead it can be transmitted to an intermediate server (e.g., hosted by an ISP, cable company, or telecom company).” EX1005,

[0058]. In other words, communication with CAS 40 can be either direct or indirect. EX1003, ¶108. And Shkedi-728 describes that information can be “transmitted through one or more intermediate servers (i.e., a server hosted by an ISP, a TVP, a cable company, or a telecommunications company, for example).” EX1004, [0054].

Accordingly, in at least some implementations of Shkedi-Chamberlain, *the OD1* [e.g., computer 34] *is redirected indirectly to the computer system via one or more intermediary servers* [e.g., redirected through one or more intermediate servers to CAS 40]. EX1003, ¶109.

t) [16] The method of claim 12 wherein the redirection of the OD1 occurs as a result of a user of the OD1 opening an email authorized by a television provider (TVP) that provides a television service to the STB.

The Shkedi-Chamberlain combination renders [16] obvious. EX1003, ¶¶110-113.

Shkedi-728 describes that, “[i]n various alternative implementations, instructions for online ad delivery or online tracking are not necessarily transmitted (e.g., by CAS 40 or other ad server, by online site 50 or other online site, by an ISP or a TVP) in real time, nor are they necessarily transmitted electronically via a network.” EX1004, [0058]. “Those instructions can be transmitted immediately over

the Internet or other network by any suitable protocol (e.g., TCP/IP), can be transmitted via email, can be stored on a digital storage medium that is physically transported, can be delivered as hardcopy printout, or can be delivered by any other suitable or desired means.” EX1004. [0058]. It would have been obvious that this e-mail would be directed or at least authorized by one or more of the ISP 22, TVP 24, or CAS 40, as these are the entities otherwise responsible for sending tracking instructions. *See id.*; EX1003, ¶110.

Shkedi-728 describes that an example of instructions for online tracking may include “an indicator of information about the user (likely not PII), such as profile information or a code or keyword to access that information in a database, online access identifiers, STB identifiers, IP addresses, times and dates of online site visits or television ads viewed.” EX1004, [0059]. While the information about the user is “likely not PII” on its own, Shkedi-728 teaches that the profile information stored on a user’s computer (*e.g.*, as part of a cookie) may be PII, and a POSITA would have recognized that the transmission of PII, where permitted, would be useful in creating the associations between devices. *See* EX1004, [0029] (“the profile can be referenced by or included in a cookie or tag placed on a user’s STB or online user interface device”), [0032] (“The cookie file can be used to identify a computer that has already been in contact with the same domain and can also be

used to store PII or non-PII pertaining to a user of that computer.... In a second example, a cookie can be used to store a username used by the user to access a site, customized preferences of the user, or various pieces of PII.”), [0034]-[0035] (describing the use of PII to associate IP_{modem} and ID_{STB}), [0053] (same), [0074] (“CAS 40 can set a cookie or tag on computer 34 that associates the user of computer 34 with the user profile that is associated with the television ad originally delivered to STB 36”); EX1003, ¶111.

Indeed, the transmission of user identifying information in response to a “redirection” of a user’s computer resulting from the opening of an e-mail was well-known. *See* EX1009, [0030]-[0032]; *see generally* EX1010; EX1003, ¶112. For example, it was common practice for online servers to utilize an object embedded in a webpage or e-mail—often referred to as a “web beacon, tracking bug, tracking pixel, pixel tag, 1×1 gif, and clear gif”—“to track who is reading a web page or e-mail, when, and from what computer.” EX1010, 1. “Some e-mails and web pages are not wholly self-contained.” *Id.* “They may refer to content on another server, rather than including the content directly.” *Id.* “When an e-mail client or web browser prepares such an e-mail or web page for display, it ordinarily sends a request to the server to send the additional content.” *Id.* “These requests typically include the IP address of the requesting computer, the time the content was re-

quested, the type of web browser that made the request, and the existence of cookies previously set by that server.” *Id.* “The server can store all of this information....” *Id.* And, as noted above, Shkedi-728 describes that such cookies may contain PII. *See* EX1004, [0029], [0032]. Accordingly, it would have at least been obvious as of the Critical Date that PII would be provided as a result of a user opening e-mail. EX1003, ¶112.

Accordingly, in at least some implementations of Shkedi-Chamberlain, ***the redirection of the OD1 occurs as a result of a user of the OD1 opening an email authorized by a television provider (TVP) that provides a television service to the STB.*** EX1003, ¶113.

u) [17] The method of claim 1 wherein the first PII is received by the computer system as a result of a redirection of the OD1 by a third-party website.

The Shkedi-Chamberlain combination renders [17] obvious. EX1003, ¶¶114-115.

As discussed for [12], Shkedi-728 describes that “[p]rofiles or partial profiles provided by a profile provider to a CAS can contain any quantity of profile information.” EX1004, [0029]. “In some instances a profile includes PII...” EX1004, [0029]. The information in these profiles can be “obtained by the CAS when a user engages in any online or television activity or provides an item of demographic information and is redirected by a profile provider to the CAS.”

EX1004, [0029]. “Examples of profile providers can include, but are not limited to, any entity that owns or uses: (1) a visited Internet site server;...[or] (6) a server recording an activity conducted from an online user interface device such as a click on an ad or a link to an ad, a viewing of an ad, a click on a link to particular content, a search, a request for product information, receipt of particular content, a product purchase, a telephone call made, or any other selected and definable user activity....” EX1004, [0027].

Accordingly, in at least some implementations of Shkedi-Chamberlain, *the first PII is received by the computer system as a result of a redirection of the OD1 by a third-party website* [e.g., the user visiting the profile provider’s Internet site]. EX1003, ¶115.

v) [18] The method of claim 1 wherein the first PII is received by the computer system as a result of a user of the OD1 opening an email.

The Shkedi-Chamberlain combination renders [18] obvious. EX1003, ¶¶116-119.

Shkedi-728 describes that, “[i]n various alternative implementations, instructions for online ad delivery or online tracking are not necessarily transmitted (e.g., by CAS 40 or other ad server, by online site 50 or other online site, by an ISP or a TVP) in real time, nor are they necessarily transmitted electronically via a network.” EX1004, [0058]. “Those instructions can be transmitted immediately over

the Internet or other network by any suitable protocol (e.g., TCP/IP), can be transmitted via email, can be stored on a digital storage medium that is physically transported, can be delivered as hardcopy printout, or can be delivered by any other suitable or desired means.” EX1004. [0058].

Shkedi-728 describes that an example of instructions for online tracking may include “an indicator of information about the user (likely not PII), such as profile information or a code or keyword to access that information in a database, online access identifiers, STB identifiers, IP addresses, times and dates of online site visits or television ads viewed.” EX1004, [0059]. While the information about the user is “likely not PII” on its own, Shkedi-728 teaches that the profile information stored on a user’s computer (*e.g.*, as part of a cookie) may be PII, and a POSITA would have recognized that the transmission of PII, where permitted, would be useful in creating the associations between devices. *See* EX1004, [0029] (“the profile can be referenced by or included in a cookie or tag placed on a user’s STB or online user interface device”), [0032] (“The cookie file can be used to identify a computer that has already been in contact with the same domain and can also be used to store PII or non-PII pertaining to a user of that computer.... In a second example, a cookie can be used to store a username used by the user to access a site, customized preferences of the user, or various pieces of PII.”), [0034]-[0035] (describing the use of PII to associate IP_{modem} and ID_{STB}), [0053] (same), [0074]

(“CAS 40 can set a cookie or tag on computer 34 that associates the user of computer 34 with the user profile that is associated with the television ad originally delivered to STB 36”); EX1003, ¶117.

Indeed, the transmission of user identifying information in response to the opening of an e-mail was well-known. *See* EX1009, [0030]-[0032]; *see generally* EX1010; EX1003, ¶118. For example, it was common practice for online servers to utilize an object embedded in a webpage or e-mail—often referred to as a “web beacon, tracking bug, tracking pixel, pixel tag, 1×1 gif, and clear gif”—“to track who is reading a web page or e-mail, when, and from what computer.” EX1010, 1. “Some e-mails and web pages are not wholly self-contained.” *Id.* “They may refer to content on another server, rather than including the content directly.” *Id.* “When an e-mail client or web browser prepares such an e-mail or web page for display, it ordinarily sends a request to the server to send the additional content.” *Id.* “These requests typically include the IP address of the requesting computer, the time the content was requested, the type of web browser that made the request, and the existence of cookies previously set by that server.” *Id.* “The server can store all of this information....” *Id.* And, as noted above, Shkedi-728 describes that such cookies may contain PII. *See* EX1004, [0029], [0032]. Accordingly, it would have at least been obvious as of the Critical Date that PII would be provided as a result of a user opening e-mail. EX1003, ¶118.

Accordingly, in at least some implementations of Shkedi-Chamberlain, ***the first PII is received by the computer system as a result of a user of the OD1 opening an email.*** EX1003, ¶119.

w) [19] The method of claim 18 wherein the email was authorized by a television provider (TVP) that provides a television service to the STB.

Claim [19] is substantially the same as at least a portion of Claim [16]. The Shkedi-Chamberlain combination renders obvious Claim [19] for at least the same reasons described above with respect to Claim [16]. *See* Claim [16], *supra*; EX1003, ¶120.

x) [20] The method of claim 1 wherein the first PII is received by the computer system as a result of a user of the OD1 logging into a third-party website.

Claim [20] is substantially the same as Claim [13]. The Shkedi-Chamberlain combination renders obvious Claim [20] for at least the same reasons described above with respect to Claim [13]. *See* Claim [13], *supra*; EX1003, ¶121.

y) [21] The method of claim 20 wherein: (a) the user behavior performed on the OD2 takes place when the OD1 is not connected to the LAN; (b) the common proxy IP address is a dynamically assigned IP address; and (c) the first PII comprises an email address.

Subparts (a), (b), and (c) of Claim [21] are substantially the same as the limitations of Claims [3], [4], and [10], respectively. The Shkedi-Chamberlain combination renders obvious Claim [21] for at least the same reasons described above

with respect to Claim [3], [4], and [10], as well as Claim [20], from which Claim [21] depends. *See* Claims [3], [4], [10], [20], *supra*; EX1003, ¶122.

z) [22.pre] A hardware computer system programmed to perform a method comprising:

The Shkedi-Chamberlain combination renders [22.pre] obvious. EX1003, ¶¶123.

Shkedi-728 describes that “[t]he systems and methods disclosed herein can be implemented as general or special purpose computers or other programmable hardware devices programmed through software or as hardware or equipment ‘programmed’ through hard wiring, or a combination of the two.” EX1004, [0089].

aa) [22.a] automatically storing first electronic indicia of an association between a first online device (OD1) and a set-top box (STB) by matching (i) first personally identifiable information (PII) about a user of the OD1, which first PII is received by the computer system from a third party, with (ii) second personally identifiable information about a user of the STB; and

Limitation [22.a] is substantially the same as Limitation [1.a]. The Shkedi-Chamberlain combination renders obvious Limitation [22.a] for at least the same reasons described above with respect to Limitation [1.a]. *See* Limitation [1.a], *supra*; EX1003, ¶124.

bb) [22.b.i] automatically measuring effectiveness of an advertisement displayed via the STB by tracking user behavior performed on a second online device (OD2) following delivery of the advertisement, based on an association between the OD2 and the STB,

Limitation [22.b.i] is substantially the same as Limitation [1.b.i]. The Shkedi-Chamberlain combination renders obvious Limitation [22.b.i] for at least the same reasons described above with respect to Limitation [1.b.i]. *See* Limitation [1.b.i], *supra*; EX1003, ¶125.

cc) [22.b.ii] which association has been determined using both (i) the first electronic indicia of the association between the OD1 and the STB stored pursuant to part (a), and (ii) stored second electronic indicia of an association between the OD2 and the OD1, which have been associated based on use by the OD1 of a common proxy IP address and based on use by the OD2 of the common proxy IP address, wherein the common proxy IP address is an IP address through which network traffic of the OD1 and the OD2 was routed,

Limitation [22.b.ii] is substantially the same as Limitation [1.b.ii]. The Shkedi-Chamberlain combination renders obvious Limitation [22.b.ii] for at least the same reasons described above with respect to Limitation [1.b.ii]. *See* Limitation [1.b.ii], *supra*; EX1003, ¶126.

dd) [22.b.iii] wherein the association between the OD1 and the OD2 has been determined by a computer system located outside a local area network (LAN) defined by the common proxy IP address.

Limitation [22.b.iii] is substantially the same as Limitation [1.b.iii]. The Shkedi-Chamberlain combination renders obvious Limitation [22.b.iii] for at least the same reasons described above with respect to Limitation [1.b.iii]. *See* Limitation [1.b.iii], *supra*; EX1003, ¶127.

ee) [23] The computer system of claim 22 wherein the method that the computer system is programmed to perform further comprises causing the advertisement to be displayed via the STB.

Claim [23] is substantially the same as Claim [2]. The Shkedi-Chamberlain combination renders obvious Claim [23] for at least the same reasons described above with respect to Claim [2]. *See* Claim [2], *supra*; EX1003, ¶128.

ff) [24] The computer system of claim 22 wherein the computer system can perform the programmed method even when the user behavior performed on the OD2 takes place when the OD1 is not connected to the LAN.

Claim [24] is substantially the same as Claim [3]. The Shkedi-Chamberlain combination renders obvious Claim [24] for at least the same reasons described above with respect to Claim [3]. *See* Claim [3], *supra*; EX1003, ¶129.

gg) [25] The computer system of claim 22 wherein the method that the computer system is programmed to perform further comprises undoing the association between the OD2 and the STB based on lack of use of the common proxy IP address by the OD2 for a predetermined period of time, wherein the common proxy IP address is a dynamically assigned IP address.

Claim [25] is substantially the same as Claims [4] and [5]. The Shkedi-Chamberlain combination renders obvious Claim [25] for at least the same reasons described above with respect to Claims [4] and [5]. *See* Claims [4], [5], *supra*; EX1003, ¶130.

hh) [26] The computer system of claim 22 wherein the method that the computer system is programmed to perform further comprises undoing the association between the OD2 and the STB based on receipt by the computer system of a user opt-out.

Claim [26] is substantially the same as Claim [6]. The Shkedi-Chamberlain combination renders obvious Claim [26] for at least the same reasons described above with respect to Claim [6]. *See* Claim [6], *supra*; EX1003, ¶131.

ii) [27] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprises using the second PII about a user of the STB, which second PII has been received from a television provider (TVP) that provides television service to the STB.

Claim [27] is substantially the same as Claim [8]. The Shkedi-Chamberlain combination renders obvious Claim [27] for at least the same reasons described above with respect to Claim [8]. *See* Claim [8], *supra*; EX1003, ¶132.

jj) [28] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprising using the second PII about a user of the STB, which second PII has been received from the STB.

Claim [28] is substantially the same as Claim [9]. The Shkedi-Chamberlain combination renders obvious Claim [28] for at least the same reasons described above with respect to Claim [9]. *See* Claim [9], *supra*; EX1003, ¶133.

kk) [29] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprises using the first PII that comprises an email address.

Claim [29] is substantially the same as Claim [10]. The Shkedi-Chamberlain combination renders obvious Claim [29] for at least the same reasons described above with respect to Claim [10]. See Claim [10], *supra*; EX1003, ¶134.

ll) [30] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprises using the first PII that has been received by the computer system as a result of a redirection of the OD1 by equipment of a third party.

Claim [30] is substantially the same as Claim [12]. The Shkedi-Chamberlain combination renders obvious Claim [30] for at least the same reasons described above with respect to Claim [12]. See Claim [12], *supra*; EX1003, ¶135.

mm) [31] The computer system of claim 30 (i) wherein the method that the computer system is programmed to perform comprises using the first PII that has been received by the computer system as a result of the redirection of the OD1, which redirection has occurred as a result of a user of the OD1 logging into a third-party website; and (ii) wherein the computer system can perform the programmed method even when the user behavior performed on the OD2 takes place when the OD1 is not connected to the LAN.

Claim [31] is substantially the same as Claim [13] and at least a portion of Claim [21]. The Shkedi-Chamberlain combination renders obvious Claim [31] for at least the same reasons described above with respect to Claims [13] and [21]. See Claim [13], [21], *supra*; EX1003, ¶136.

nn) [32] The computer system of claim 22 wherein the method that the computer system is programmed to perform

comprises using the first PII that has been received by the computer system as a result of a redirection of the OD1 by a third-party website.

Claim [32] is substantially the same as Claim [17]. The Shkedi-Chamberlain combination renders obvious Claim [32] for at least the same reasons described above with respect to Claim [17]. See Claim [17], *supra*; EX1003, ¶137.

oo) [33] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprises using the first PII that has been received by the computer system as a result of a user of the OD1 opening an email.

Claim [33] is substantially the same as Claim [18]. The Shkedi-Chamberlain combination renders obvious Claim [34] 3or at least the same reasons described above with respect to Claim [18]. See Claim [18], *supra*; EX1003, ¶138.

pp) [34] The computer system of claim 22 wherein the method that the computer system is programmed to perform comprises using the first PII that has been received by the computer system as a result of a user of the OD1 logging into a third-party website.

Claim [34] is substantially the same as Claim [20]. The Shkedi-Chamberlain combination renders obvious Claim [34] for at least the same reasons described above with respect to Claim [20]. See Claim [20], *supra*; EX1003, ¶139.

IV. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Petitioners authorize 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)

Viant Technology LLC, Viant Technology, Inc., Lockr, Inc., Mediaocean LLC, Flashtalking Inc., Innovid Corp., AppLovin Corporation, AppLovin Active Holdings, LLC, Wurl, LLC, Adjust Inc., and Adjust GmbH are the real parties-in-interest.

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

To Petitioners' knowledge, the '962 Patent is the subject of the following pending civil actions:

- *AlmondNet, Inc. et al. v. Mediaocean LLC et al.*, Case No. 1-25-cv-00406 (DDE);
- *AlmondNet, Inc. et al. v. Viant Technology Inc. et al.*, Case No. 1-25-cv-00566 (DDE);
- *Intent IQ, LLC v. MNTN, Inc.*, Case No. 7-25-cv-00246 (WDTX);
- *Intent IQ, LLC v. Samba TV, Inc.*, Case No. 1-25-cv-01084 (DDE);
- *AlmondNet, Inc. et al. v. AppLovin Corporation et al.*, Case No. 1-25-cv-01473 (DDE)

To Petitioners' knowledge, the '962 Patent was the subject of the following terminated civil actions:

- *AlmondNet, Inc. et al v. Freewheel Media, Inc. et al.*, Case No. 1-24-

cv-01259 (DDE)

The '962 Patent is subject to a terminal disclaimer with respect to U.S. Patent No. 11,368,763.

Petitioners are not aware of any other disclaimers, reexamination certificates, or current IPR petitions addressing the '962 Patent.

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

Petitioners provide 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.

Petitioners consent to electronic service by email at IPR00035-0037IP1@fr.com (referencing No. 00035-0037IP1 and cc'ing PTABInbound@fr.com).

Respectfully submitted,

Dated April 2, 2026

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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 12,794 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated April 2, 2026

/David L. Holt/

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on April 2, 2026, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided by Federal Express, to the Patent Owner, by serving the correspondence address of record as follows:

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