IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Gregory G. Raleigh, et al.	
U.S. Patent No.:	9,647,918	Attorney Docket No.: 39843-0182IP2
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Title:	MOBILE DEVICE AND METHOD ATTRIBUTING MEDIA SERVICES NETWORK USAGE TO REQUESTING APPLICATION	

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 9,647,918 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

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C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3).....101
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EXHIBITS

SAMSUNG-1001	U.S. Patent No. 9,647,918 to Gregory G. Raleigh, et al. ("the '918 Patent")
SAMSUNG-1002	Excerpts from the Prosecution History of the '918 Patent ("the Prosecution History")
SAMSUNG-1003	Declaration and Curriculum Vitae of Dr. Patrick Traynor
SAMSUNG-1004	Complaint, *Headwater Research LLC v. Samsung Electronics Co., Ltd. et al.,* 2-23-cv-00641 (EDTX), filed December 29, 2023
SAMSUNG-1005	Infringement Contentions, *Headwater Research LLC v. Samsung Electronics Co., Ltd. et al.,* 2-23-cv-00641 (EDTX), filed May 15, 2024
SAMSUNG-1006	U.S. Provisional Application No. 61/264,126
SAMSUNG-1007	U.S. Provisional Application No. 61/270,353
SAMSUNG-1008	U.S. Provisional Application No. 61/275,208
SAMSUNG-1009	U.S. Provisional Application No. 61/237,753
SAMSUNG-1010	U.S. Provisional Application No. 61/264,120
SAMSUNG-1011	U.S. Provisional Application No. 61/348,022
SAMSUNG-1012	U.S. Provisional Application No. 61/381,159
SAMSUNG-1013	U.S. Provisional Application No. 61/381,162
SAMSUNG-1014	U.S. Provisional Application No. 61/384,456
SAMSUNG-1015	U.S. Provisional Application No. 61/389,547
SAMSUNG-1016	U.S. Provisional Application No. 61/385,020
SAMSUNG-1017	U.S. Provisional Application No. 61/387,243
SAMSUNG-1018	U.S. Provisional Application No. 61/387,247

SAMSUNG-1019 U.S. Provisional Application No. 61/407,358

SAMSUNG-1020 U.S. Provisional Application No. 61/418,507

SAMSUNG-1021 U.S. Provisional Application No. 61/418,509

SAMSUNG-1022 U.S. Provisional Application No. 61/420,727

SAMSUNG-1023 U.S. Provisional Application No. 61/422,565

SAMSUNG-1024 U.S. Provisional Application No. 61/422,572

SAMSUNG-1025 U.S. Provisional Application No. 61/422,574

SAMSUNG-1026 U.S. Provisional Application No. 61/252,151

SAMSUNG-1027 U.S. Provisional Application No. 61/252,153

SAMSUNG-1028 U.S. Provisional Application No. 61/206,354

SAMSUNG-1029 U.S. Provisional Application No. 61/206,944

SAMSUNG-1030 U.S. Provisional Application No. 61/207,393

SAMSUNG-1031 U.S. Provisional Application No. 61/207,739

SAMSUNG-1032 U.S. Application No. 12/695,019

SAMSUNG-1033 U.S. Application No. 12/695,020

SAMSUNG-1034 U.S. Application No. 12/694,445

SAMSUNG-1035 U.S. Application No. 12/694,451

SAMSUNG-1036 U.S. Application No. 12/694,455

SAMSUNG-1037 U.S. Application No. 12/695,980

SAMSUNG-1038 U.S. Application No. 12/695,021

SAMSUNG-1039 U.S. Application No. 12/380,780

SAMSUNG-1040 U.S. Application No. 12/380,778

SAMSUNG-1041 U.S. Patent Publication No 2006/0149811 (“Bennett”)

SAMSUNG-1042 RESERVED

SAMSUNG-1043 U.S. Patent No. 8,429,516 ("Riggs")

SAMSUNG-1044 EP Patent Publication No. 1 850 575 A1 ("Rybak")

SAMSUNG-1045 U.S. Patent Publication No. 2004/0260630 ("Benco")

SAMSUNG-1046 U.S. Patent No. 6,578,077 ("Rakoshitz")

SAMSUNG-1047 U.S. Patent Publication No. 2006/0223495 ("Cassett")

SAMSUNG-1048 U.S. Patent Publication No. 2008/0080458 ("Cole")

SAMSUNG-1049 U.S. Patent Publication No. 2008/0209451 ("Michels")

SAMSUNG-1050 U.S. Patent Publication No. 2006/0039354 ("Rao")

SAMSUNG-1051-1052 RESERVED

SAMSUNG-1053 U.S. Provisional Application No. 61/435,564

SAMSUNG-1054 U.S. Patent No. 6,754,470 ("Hendrickson")

SAMSUNG-1055 U.S. Patent Publication No. 2002/0056126 ("Srikantan")

SAMSUNG-1056 Newton's Telecom Dictionary, 24th Edition

SAMSUNG-1057 Webster's New World, Telecom Dictionary

SAMSUNG-1058 Wiley Electrical and Electronics Engineering (IEEE) Dictionary

SAMSUNG-1059 The Authoritative Dictionary of IEEE Standards Terms

SAMSUNG-1060 Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) ("Director's Guidance")

SAMSUNG-1061 Samsung Stipulation letter regarding IPR grounds in District court litigation.

SAMSUNG-1062 U.S. Patent Publication No. US 2008/0122796 ("Jobs")

SAMSUNG-1063 U.S. Patent Publication No. US 2010/0017506 ("Fadell")

SAMSUNG-1064 Federal Court Management Statistics (December 31, 2023)

Claim 1	
[1.pre]	A wireless end-user device, comprising:
[1.1]	a wireless modem configurable to connect to a wireless network;
[1.2]	a network stack configurable to receive and transmit data via the wireless modem and the wireless network;
[1.3]	a first network stack Application Programming Interface (API), containing at least one first call accessible to each of a plurality of device applications, the first network stack API callable by each of the plurality of device applications to open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network;
[1.4]	a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application;
[1.5]	a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network; and
[1.6]	one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, to associate wireless network data usage for respective data packet flows opened and used via the first network stack API with the device application opening such respective data packet flow, and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API.
Claim 2	
[2]	The wireless end-user device of claim 1, wherein to associate wireless network data usage for the media object network data transfers with the device application that makes the data transfer request for

	the media object comprises to identify at least one of an application name, an application identifier, or a process identifier for the application that makes the data transfer request.
Claim 3	
[3]	The wireless end-user device of claim 2, wherein the data transfer request comprises a network resource identifier that identifies a source of the data to be transferred, a proxy to the source of the data to be transferred, or the media object to be transferred, in particular, wherein the network resource identifier comprises one or more of an Internet Protocol address, a Uniform Resource Locator, a remote file name/address, a stream name, and an object name.
Claim 4	
[4]	The wireless end-user device of claim 3, wherein to associate wireless network data usage for the media object network data transfers with the device application that makes the data transfer request for the media object further comprises to store an entry comprising the at least one of the application name, the application identifier, or the process identifier for each of the device applications that makes a data transfer request, each stored entry further comprising information about the corresponding network resource identifier for the data transfer request.
Claim 5	
[5]	The wireless end-user device of claim 4, wherein the one or more service classification and measurement agents includes a requesting application storing function within the media services manager.
Claim 6	
[6]	The wireless end-user device of claim 5, wherein the media service manager is a first media service manager and the requesting application storing function is a first requesting application storing function, the device further comprising a second media service manager of a different type than the first media service manager, the service classification agent including a second requesting application storing function within the second media service manager.

Claim 7	
[7]	The wireless end-user device of claim 6, further comprising a usage and classification database, the one or more service classification and measurement agents to receive application association information stored by the first and second requesting application storing functions, and to maintain the usage and classification database based in part on the received application association information.
Claim 8	
[8]	The wireless end-user device of claim 3, wherein to manage network data transfers for the media object by interfacing with the at least one network stack comprises to map the data transfer request and network resource identifier to one or more data flow connections communicated through the device network stack.
Claim 9	
[9]	The wireless end-user device of claim 1, further comprising a media player and a user interface, wherein the media object comprises media data that is, as a result of the media service manager management of network data transfers for the media object, received by the device and played by the media player through the user interface.
Claim 10	
[10.1]	The wireless end-user device of claim 9, the media service manager to receive, from the application launching the data transfer request, a network resource indicator that identifies the media object,
[10.2]	return to the application a media object handle descriptor,
[10.3]	call a proxy service to perform one or more network data transfers comprising the media object,
[10.4]	accept, from the application, commands associated with the media object handle descriptor, and
[10.5]	control playback of the media data by the media player based on the commands.

Claim 11	
[11.1]	The wireless end-user device of claim 1, wherein the one or more service classification and measurement agents comprise: a requesting application storage agent to, for each device application that makes a data transfer request using the second API, store application identification information and network resource identification information;
[11.2]	a network data flow storage agent to, for each network data flow associated with the media service manager, identify network data flow identification information; and
[11.3]	an association agent to match the network data flow identification information for a network data flow with application identification information for the network data transfer associated with the network data flow.
Claim 12	
[12.1]	The wireless end-user device of claim 1, further comprising: a local database to store data usage, including data usage for network data transfers managed by the media service manager on behalf of a device application, the stored data usage classified by device application;
[12.2]	a user interface; and
[12.3]	a user interface display agent to display the data usage classified by application to a user.
Claim 13	
[13]	The wireless end-user device of claim 1, the one or more service classification and measurement agents to further associate one or more traffic flows, comprising the media object network data transfers, with the device application that makes the data transfer request, the device further comprising an enforcement agent to, based on the association between the one or more traffic flows and the device application, enforce an application-based usage control on network data usage by one or more of the device applications.

Claim 14	
[14.pre]	A method of operating a wireless end-user device when connected via a wireless modem to a wireless network, the method comprising:
[14.1]	operating a first network stack Application Programming Interface (API), containing at least one first call accessible to each of a plurality of device applications, the first network stack API callable by each of the plurality of device applications to open and use data flows via a network stack coupled to the wireless modem;
[14.2]	operating a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application;
[14.3]	operating a media service manager prompted by the second call, the media service manager managing network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network; and
[14.4]	associating wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, associating wireless network data usage for respective data packet flows opened and used via the first network stack API with the device application opening such respective data packet flow, and reconciling wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API.
Claim 15	
[15.pre]	A wireless end-user device, comprising:
[15.1]	a wireless modem configurable to connect to a wireless network;
[15.2]	a network stack configurable to receive and transmit data via the wireless modem and the wireless network;
[15.3]	a first network stack Application Programming Interface (API), containing at least one first call to allow device applications to open and

	use data flows via the network stack, the wireless modem, and the at least one wireless network;
[15.4]	a second API containing at least one second call to allow device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the device application, wherein the data transfer request comprises a network resource identifier that identifies a source of the data to be transferred, a proxy to the source of the data to be transferred, or the media object to be transferred in particular, wherein the network resource identifier comprises one or more of an Internet Protocol address a Uniform Resource Locator, a remote file name/ address, a stream name, and an object name;
[15.5]	a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network and
[15.6]	a service classification agent to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, wherein to associate data usage for the media object network data transfers with the device application that makes the data transfer request for the media object comprises to identify and store at least one of an application name, an application identifier, or a process identifier for the application that makes the data transfer request, each stored entry other comprising information about the corresponding network resource identifier for the data transfer request.
Claim 16	
[16]	The wireless end-user device of claim 15, wherein the service classification agent includes a requesting application storing function within the media services manager.
Claim 17	
[17]	The wireless end-user device of claim 16, wherein the media service manager is a first media service manager and the requesting application storing function is a first requesting application storing function, the device further comprising a second media service manager of a different type than the first media service manager, the service

	classification agent including a second requesting application storing function within the second media service manager.
Claim 18	
[18]	The wireless end-user device of claim 17, further comprising a usage and classification reconciliation agent and usage and classification database, the usage and classification reconciliation agent to receive application association information stored by the first and second requesting application storing functions, and to maintain the usage and classification database based in part on the received application association information.
Claim 19	
[19.pre]	A wireless end-user device, comprising:
[19.1]	a wireless modem configurable to connect to a wireless network;
[19.2]	a network stack configurable to receive and transmit data via the wireless modem and the wireless network;
[19.3]	a first network stack Application Programming Interface (API), containing at least one first call to allow device applications to open and use data flows via the network stack, the wireless modem, and the at least one wireless network;
[19.4]	a second API containing at least one second call to allow device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the device application, wherein the data transfer request comprises a network resource identifier that identifies a source of the data to be transferred, a proxy to the source of the data to be transferred, or the media object to be transferred in particular, wherein the network resource identifier comprises one or more of an Internet Protocol address a Uniform Resource Locator, a remote file name/ address, a stream name, and an object name;
[19.5]	a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network wherein to manage network data transfers for the media object by interfacing with the at least one network stack comprises to

	map the data transfer request and network resource identifier to one or more data flow connections communicated through the device networking stack and
[19.6]	a service classification agent to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, wherein to associate data usage for the media object network data transfers with the device application that makes the data transfer request for the media object comprises to identify at least one of an application name, an application identifier, or a process identifier for the application that makes the data transfer request.

Samsung Electronics Co., Ltd. ("Petitioner" or "Samsung") petitions for *Inter Partes* Review ("IPR") of claims 1-19 ("the Challenged Claims") of U.S. Patent No. 9,647,918 ("the '918 Patent"). Compelling evidence presented in this Petition demonstrates at least a reasonable likelihood that Samsung will prevail with respect to at least one of the Challenged Claims.

I. REQUIREMENTS FOR IPR

A. Grounds for Standing

Petitioner certifies that the '918 Patent is available for IPR. This petition is being filed within one year of service of a complaint against Samsung. Samsung 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 grounds noted below. Dr. Traynor provides supporting testimony in his Declaration. SAMSUNG-1003, ¶¶1-123.

Ground	Claim(s)	35 U.S.C. § 103
1A	1, 9, 13-14	Obvious over Bennett in view of Rakoshitz and Rybak
1B	2-6, 8, 11, 15-17, 19	Obvious over Bennett in view of Rakoshitz, Rybak, and Riggs
1C	7, 12, 18	Obvious over Bennett in view of Rakoshitz,

Ground	Claim(s)	35 U.S.C. § 103
		Rybak, Riggs, and Hendrickson
1D	10	Obvious over Bennett in view of Rakoshitz, Rybak, Riggs, and Srikantan

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); SAMSUNG-1003, ¶23. Petitioner reserves the right to respond to any constructions offered by Patent Owner or adopted by the Board. Petitioner is not conceding that each challenged claim satisfies all statutory requirements, nor is Petitioner waiving any arguments concerning claim scope or grounds that can only be raised in district court. For this petition, Petitioner applies prior art in a manner consistent with Patent Owner's allegations of infringement before the district court.

D. Level of Ordinary Skill in the Art

A person of ordinary skill in the art ("POSITA") relating to the subject matter of the '918 Patent would have had (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 in wireless communication network applications and software. SAMSUNG-1003, ¶¶21-22. Additional graduate education

could substitute for professional experience, and *vice versa*. *Id*.

II. THE '918 PATENT

A. Brief Description

The '918 Patent is directed to "a wireless end-user device" that includes a "proxy network service manager" (also referred to as a "proxy") that facilitates media requests from resident applications. SAMSUNG-1001, Abstract, 71:21-42, 110:12-111:17, 119:49-60, FIGS. 30, 35. In an example embodiment depicted in FIG. 30, the application "utilizes an API to trigger the proxy 3012 which in turn passes through a socket connection at the socket 3016 as traffic." *Id*., 110:46-53. FIG. 35 depicts another example embodiment that includes "a proxy service manager 3502," a "proxy/library API 3504," a "stack API 3518," and a "usage/classification reconciliation engine 3526." *Id*., 119:49-60. The '918 Patent describes that example "stack API level … requests" are "socket open/send requests." *Id*., 93:33-36; SAMSUNG-1003, ¶24.

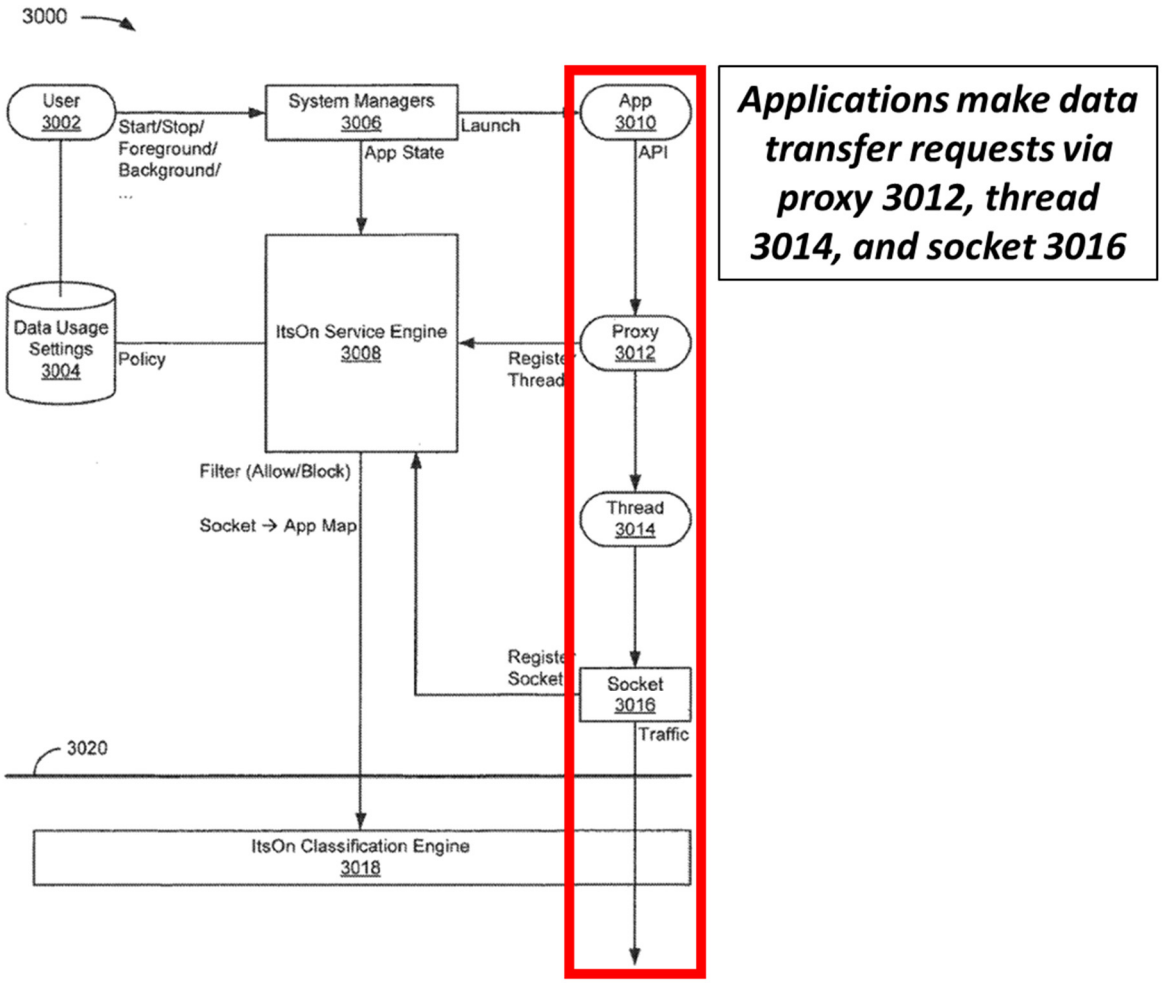


FIG. 30

SAMSUNG-1001, FIG. 30[1].

[1] Annotations to figures are shown in color.

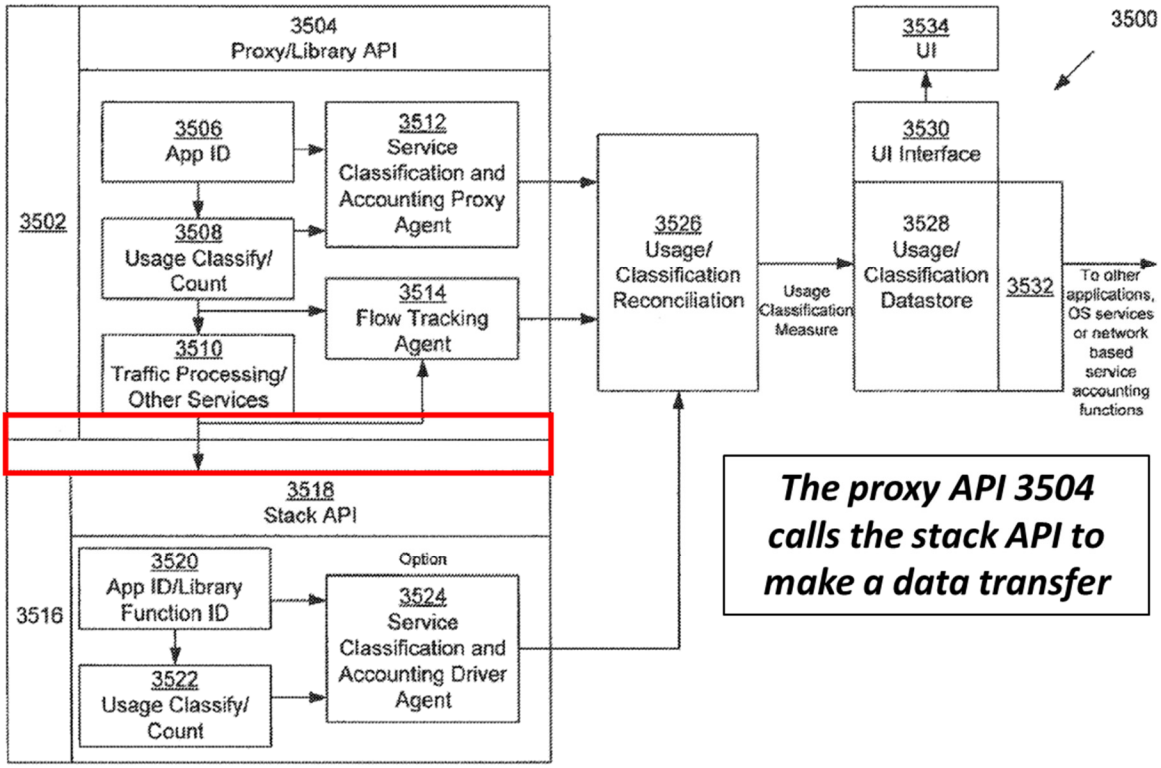


FIG. 35

SAMSUNG-1001, FIG. 35.

B. Prosecution History

The Examiner issued only one office action during the '918 Patent's prosecution, including prior art rejections of claims 2-4, 11, and 13-16 (issued claims 1-2, 9, and 11-14) under §102 over Deu-Ngoc (US 8,402,165), and a rejection of claim 5 (issued claim 3) under §103 over Deu-Ngoc in view of Constantinof (US 2014/0241342). SAMSUNG-1002, 381-390. The Examiner also indicated that claims 6-10 and 12 (issued claims 4-8 and 10) were allowable. *Id*. The applicant amended the claims to overcome the above rejections and added new claims 17-21

(issued claims 15-19). SAMSUNG-1002, 99-112. All claims were then allowed. SAMSUNG-1002, 21-25; SAMSUNG-1003, ¶25.

C. Critical Date of the '918 Patent

As an initial matter, Patent Owner has advanced a Critical Date of Jan. 24, 2011 for the '918 Patent in co-pending litigation. SAMSUNG-1005, 11-12. The '918 Patent, however, claims priority to applications filed as early as Jan. 28, 2009. Although Petitioner does not believe priority before Jan. 24, 2011 is entitled and has concurrently filed another petition that challenges the earlier priority claims, Petitioner has applied prior art in this Petition that all pre-dates the earliest priority claim of Jan. 28, 2009. Specifically, as shown in the table below, all references presented in this Petition pre-date January 28, 2009 and, thus, constitute prior art.

Reference	Filing Date	Publication Date
US 2006/0149811 (Bennett)	Apr. 26, 2005	Jul. 6, 2006
US 6,578,077 (Rakoshitz)	Dec. 29, 1997	Jun. 10, 2003
EP 1 850 575 A1 (Rybak)	Apr. 27, 2006	Oct. 31, 2007
US 8,429,516 (Riggs)	Aug. 20, 2007	Apr. 23, 2013
US 6,754,470 (Hendrickson)	Aug. 31, 2001	Jun. 22, 2004
US 2002/0056126 (Srikantan)	Apr. 6, 2001	May 9, 2002

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. [GROUND 1A] – Bennett, Rakoshitz, and Rybak render claims 1, 9, and 13-14 obvious

1. Overview of Bennett

Bennett discloses a "media client" including a "user agent to communicate with a multimedia application in the networked communication device," a "signaling agent … to establish and maintain communication sessions," and a "media agent" which "performs media operations." SAMSUNG-1041, Abstract, ¶¶[0024]-[0026], [0029]-[0031], FIG. 3. These media operations include "Push-to-Talk over Cellular (PoC), presence and Instant Messaging (IM), video and audio streaming, voice over IP videoconferencing, interactive gaming, white-boarding and content sharing." SAMSUNG-1041, ¶[0024]. Bennett discloses that its media client is implemented in a "mobile device" that includes "a [user agent] 202, [signaling agent] 204 and [media agent] 206." SAMSUNG-1041, ¶¶[0028], [0078]. Bennett's media agent "stream[s]" media to a "media player" on the device, which outputs the media to the user using "a local media rendering device (e.g., speaker and/or display of a mobile terminal 100)." SAMSUNG-1041, ¶¶[0025], [0076], FIG. 3. Additionally, Bennett discloses that media can also be routed directly to the application. ¶[0076], FIG. 10; SAMSUNG-1003, ¶26.

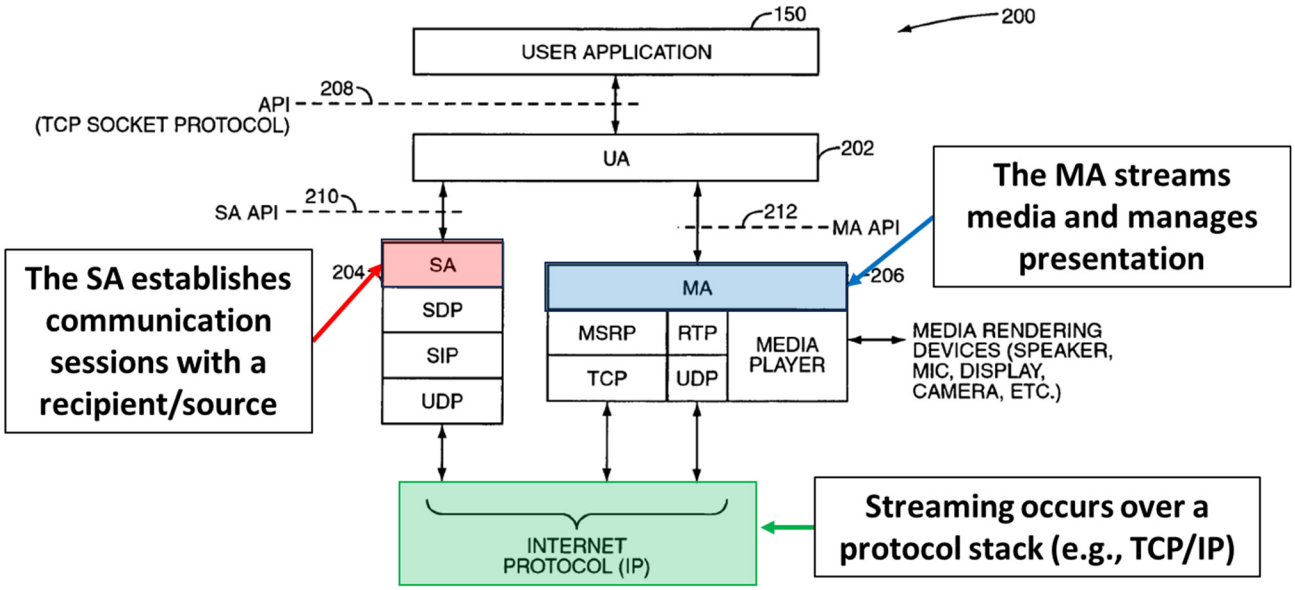


FIG. 3

SAMSUNG-1041, FIG. 3.

2. Overview of Rakoshitz

Rakoshitz discloses a "set of techniques or mechanisms including policies that can be applied in a network to manage limited network resources such as bandwidth and the like." SAMSUNG-1046, 4:22-40. Rakoshitz effectuates its policy-based network management with a "tool 208," coupled with an "application-programming interface ('API') 223," that "performs inbound and outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations." SAMSUNG-1046, 9:18-48, FIG. 2. The tool 208 includes various modules, to include a

"Flow Analysis and Session Tagging" ("FAST") module, a "Flow Analysis and Intelligent Regulation" ("FAIR") module, and a "Policy Engine Module." SAMSUNG-1046, 12:12-58, FIG. 2; SAMSUNG-1003, ¶27. The FAST module "implements rich, application level traffic classification, and measurement," the FAIR module "implements traffic control based on a combination of flow control and queuing algorithms," and the policy engine module "oversees the FAST and FAIR modules" and "includes a security policy 201, a traffic policy 202, and other policies 221." *Id*. Rakoshitz's traffic policy "defines specific limitations or parameters for the traffic." *Id*.

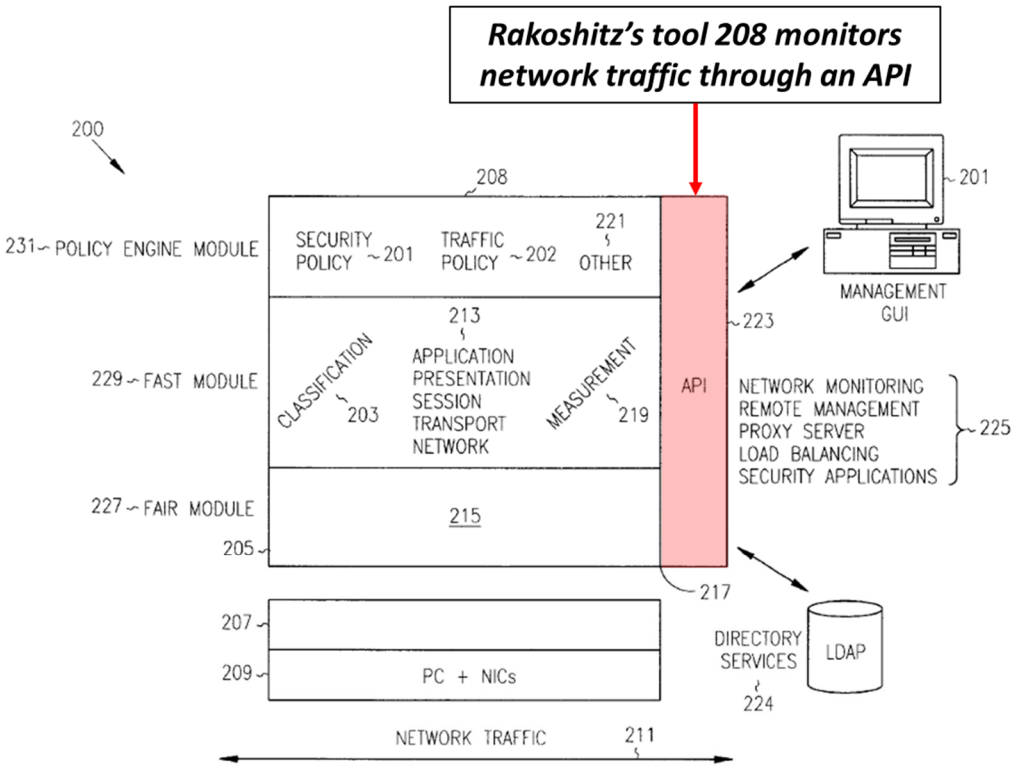


FIG. 2

SAMSUNG-1046, FIG. 2.

3. The combination of Bennett and Rakoshitz

It would have been obvious for a POSITA to incorporate Rakoshitz's techniques of managing data traffic—to include Rakoshitz's tool 208 and traffic policies—into the media clients of Bennett to monitor data usage for applications making "media object network data transfers" and using "respective data packet flows." SAMSUNG-1041, ¶[0078]; SAMSUNG-1046, 9:18-48, 12:51-58, FIG. 2. Dr. Traynor notes that a POSITA would have been motivated to make this combination for multiple reasons. SAMSUNG-1003, ¶28.

First, Rakoshitz's Quality of Service ("QoS") "bandwidth management" techniques would have enhanced the performance of media streaming applications on the Bennett device by prioritizing packet transmission for these applications during times of congestion—reducing "latency," "jitter," and "packet loss[es]." SAMSUNG-1046, 3:27-31, 3:61-5:39, 7:14-37. As Dr. Traynor explains, media streaming applications were known to have high QoS requirements (especially in earlier wireless networks) and a POSITA would have known that bandwidth management, as described in Rakoshitz, was an invaluable tool for making the most of limited resources. SAMSUNG-1003, ¶29. Indeed, Rakoshitz describes "real-time audio and video" applications as "[h]igh bandwidth" applications. SAMSUNG-1046, 7:40-50, 14:61-67, Table-2; SAMSUNG-1003, ¶29.

Second, because Rakoshitz's traffic monitoring and policies are applied at an

application level, Rakoshitz's techniques would have enabled the users of Bennett's devices to have greater control over specific application activity that was data-intensive. SAMSUNG-1003, ¶30; SAMSUNG-1046, 3:27-31, 9:39-47, 12:20-33, FIG. 2. Rakoshitz's application-level traffic management would have enabled users to prevent data-intensive activity from a particular application or application type from consuming unacceptable levels of data or impeding use of the network. *Id*. As described above, "real-time audio and video" applications are "[h]igh bandwidth" applications, and a user would have benefitted from the ability to monitor and control these applications, in particular. SAMSUNG-1046, 7:40-50, 14:61-67, Table-2. Indeed, Rakoshitz acknowledges that audio and video applications "hog a lot of bandwidth" but are also "bandwidth sensitive," and thus "are controlled best by setting a high priority and a policy to limit admission of sessions so that bandwidth use is capped but admitted sessions have a reasonable quality." SAMSUNG-1046, 14:61-67; SAMSUNG-1003, ¶30.

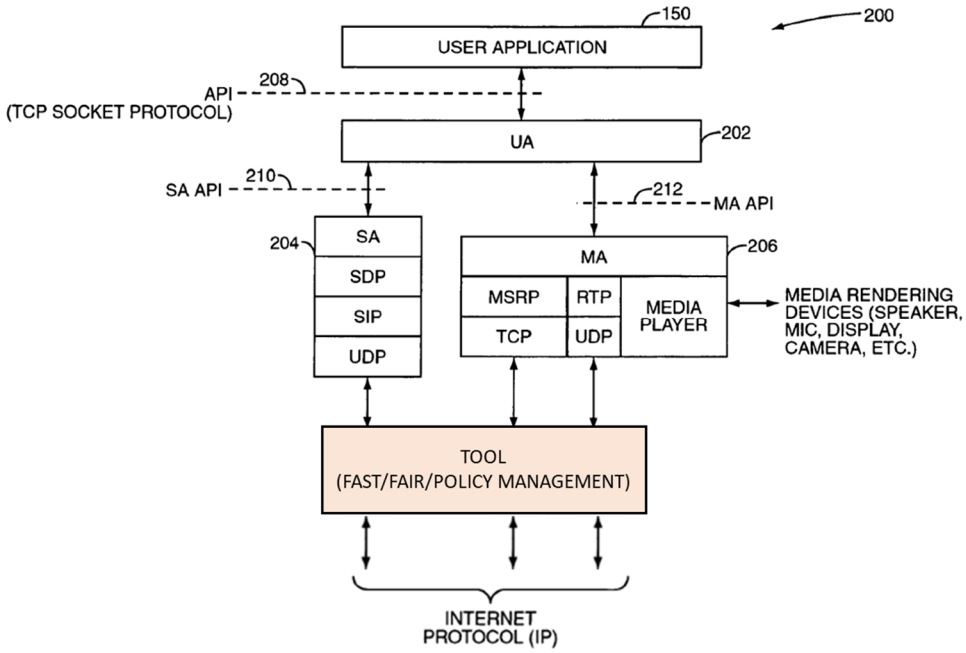
Finally, incorporating per-application traffic monitoring into the Bennett device would have enabled device manufacturers and service providers to incorporate additional applications and functionality into wireless devices while being mindful of individual application QoS requirements. SAMSUNG-1003, ¶31; SAMSUNG-1046, 3:27-31, 9:39-47, 12:20-33, FIG. 2. Indeed, Bennett acknowledges that "[t]he convergence of mobile and IP networks will allow service providers to offer

new IP services to mobile subscribers that were previously available only to users in fixed networks, such as the Internet." SAMSUNG-1041, ¶[0002]. Rakoshitz's techniques would have allowed service providers to incorporate the "new IP services" described by Bennett while ensuring the QoS requirements of these services could be met (or at least optimized). SAMSUNG-1041, ¶[0002]; SAMSUNG-1046, 3:27-31, 9:39-47, 12:20-33, FIG. 2; SAMSUNG-1003, ¶31.

Incorporating Rakoshitz's techniques into the Bennett device would have been nothing more than the application of known techniques (e.g., managing data traffic according to Rakoshitz) to a known structure (e.g., Bennett's devices) to yield predictable results (e.g., the management of the Bennett-Rakoshitz device's data traffic). *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007). As Dr. Traynor explains, a POSITA would have expected success in implementing this combination because the monitoring of outgoing API data traffic on a mobile device (such as the UA, SA, and MA APIs of Bennett) was known as of the Critical Date and would have involved only routine programming skill. SAMSUNG-1003, ¶32. Rakoshitz itself corroborates Dr. Traynor's testimony by disclosing that "tool 208" "interfaces with [an] API" to enforce a "traffic policy [that] defines specific limitations or parameters for the traffic." SAMSUNG-1046, Abstract, 9:18-24, 12:12-58, Claim 1. Michels provides another example of a system for "monitoring and control of access to [an] API" with a processor that "monitors the distribution of

the API elements" and "the number of API requests made by [a] developer client over a period of time, the identity of the developer client, usage trends by the developer client, and usage trends based on IP address." SAMSUNG-1049, ¶¶[0002]-[0015], [0043]-[0063]; SAMSUNG-1003, ¶32.

Further, Rakoshitz describes that its techniques can be implemented "at a single point of access such as a computer terminal or firewall" (e.g., Bennett's devices). SAMSUNG-1046, 3:21-23. As Dr. Traynor explains, a POSITA would have been motivated to incorporate Rakoshitz's techniques at a "single point of access"—particularly, the Bennett device—because "the transfer of data over a wireless network is resource expensive, and remote monitoring of local device resource consumption would have required significant bandwidth itself." SAMSUNG-1046, 3:21-23; SAMSUNG-1003, ¶33. Additionally, as of the Critical Date, it was already well known for a mobile device to locally monitor application usage and enforce policy restrictions. SAMSUNG-1048, ¶¶[0034]-[0036] (disclosing a mobile device with a "connection manager" that enforces policies for "communication interfaces"); SAMSUNG-1050, ¶¶[0088], [0099]-[0104] (disclosing a mobile client with an "agent 326" and "filter 322" that classify and prioritize packet transmissions for applications); SAMSUNG-1003, ¶33.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz).

4. Overview of Rybak

Rybak discloses techniques for "monitoring resource usage of a mobile communications device" with respect to a "mobile communication plan profile associated with a subscriber" that includes "at least a value representing a limit of mobile communication resource usage within a specified calendar period." SAMSUNG-1044, ¶¶[0003], [0030]-[0042], FIG. 4. Rybak effectuates resource monitoring and control with a "usage control module 216" for "calculating usage statistics based on the resource consumption data and the service plan profile." SAMSUNG-1044, ¶¶[0022]-[0029], FIGS. 2-3. The usage control module "acquires the quantity of current period usage of at least one limited wireless resource" to include "on-peak

cellular voice minutes, megabytes of data or quantity of SMS messages." SAMSUNG-1044, ¶[0033]. A "display screen," shown below, is used to depict a current usage level to the user for different applications. SAMSUNG-1044, ¶¶[0043]-[0051], FIGS. 5-8; SAMSUNG-1003, ¶34.

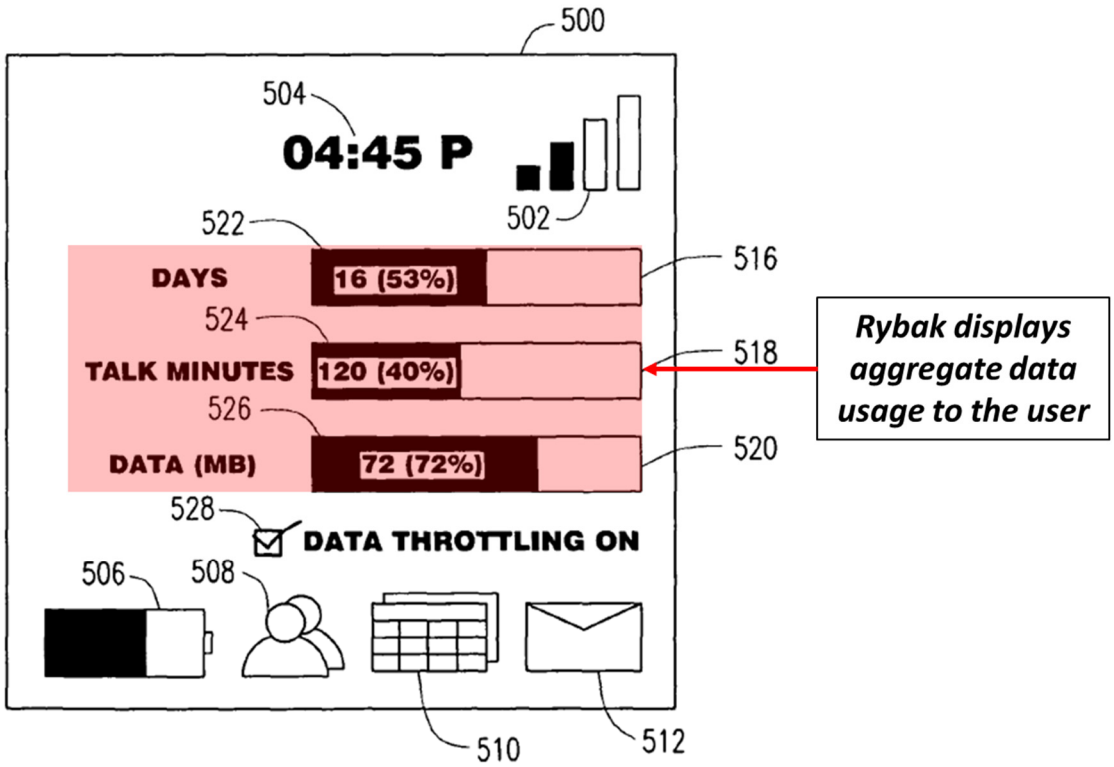


FIG. 7

SAMSUNG-1044, FIG. 7.

5. The combination of Bennett-Rakoshitz and Rybak

It would have been obvious for a POSITA to incorporate Rybak's techniques of monitoring and tracking aggregate application data usage—to include the techniques of Rybak's usage monitoring module—into the media clients of Bennett (e.g., within the tool of Rakoshitz) to monitor aggregate data usage for applications

making "media object network data transfers" and using "respective data packet flows." SAMSUNG-1041, ¶[0078]; SAMSUNG-1044, ¶¶[0022]-[0029], FIGS. 2-3. Dr. Traynor notes that a POSITA would have been motivated to make this combination for multiple reasons. SAMSUNG-1003, ¶35.

First, as Dr. Traynor explains, the benefits of data usage monitoring were well-known and would have been part of a POSITA's general knowledge. SAMSUNG-1003, ¶36. Rybak's techniques for "monitoring resource usage of a mobile communications device" would have prevented the user from exceeding data usage limits imposed by a "mobile communication plan" while using the streaming applications disclosed by Bennett. SAMSUNG-1044, ¶¶[0003]-[0004], [0030]-[0042], [0047], FIGS. 2, 7; SAMSUNG-1041, Abstract, ¶¶[0024]-[0026], [0029]-[0031], FIG. 3. Benco corroborates Dr. Traynor's testimony, and discloses another example of a "method for providing mobile telephone subscribers with data on accumulated usage" where "[s]ubscribers are warned if their accumulated usage threatens to exceed or exceeds the allowable basic usage of their billing plan." SAMSUNG-1045, Abstract, ¶¶[0001]-[0020]. Jobs provides another example, where a user interface of a mobile device "displays an updated account usage metric for an account associated with usage of the device (e.g., a cellular phone account)." SAMSUNG-1062, ¶[0213]. Fadell is yet another example of "metering" network re-

source usage on a mobile device to prevent a user from exceeding a "resource allocation." SAMSUNG-1063, ¶¶[0002]-[0007], [0017], [0050]-[0053], [0056]. With this background and knowledge of the benefits of data usage monitoring, a POSITA would have been motivated to consider and include Rybak's data usage monitoring in Bennett's device. SAMSUNG-1003, ¶36.

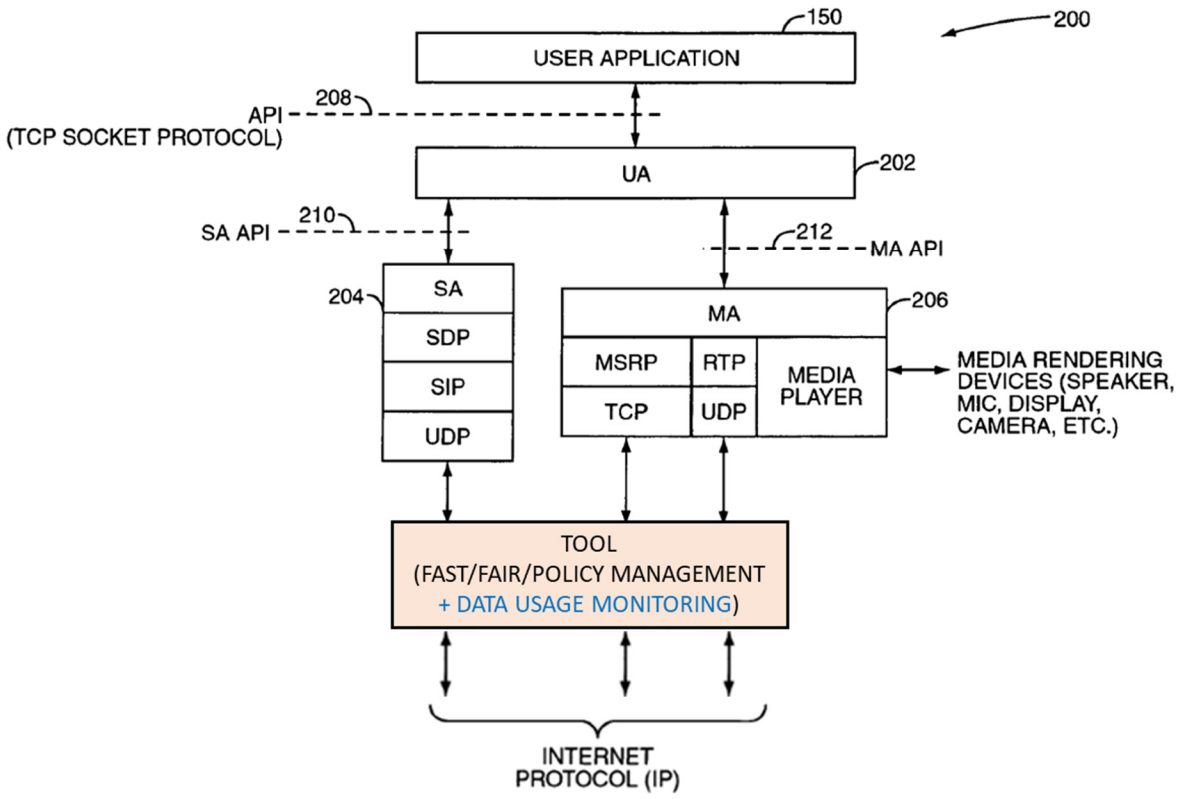
Second, incorporating per-application data usage limits into the Bennett device would have enabled device manufacturers and service providers to incorporate additional applications and functionality into wireless devices while being mindful of aggregate device data usage. SAMSUNG-1044, ¶¶[0003]-[0004], [0030]-[0042], [0047]. Indeed, Bennett acknowledges that "[t]he convergence of mobile and IP networks will allow service providers to offer new IP services to mobile subscribers that were previously available only to users in fixed networks, such as the Internet." SAMSUNG-1041, ¶[0002]. Rybak's techniques would have allowed service providers to incorporate the "new IP services" described by Bennett while ensuring these new services did not come with unacceptable levels of data usage. SAMSUNG-1041, ¶[0002]; SAMSUNG-1044, ¶¶[0003]-[0004], [0030]-[0042], [0047]; SAMSUNG-1003, ¶37.

Finally, Rybak's techniques of controlling data usage limits and throttling application usage by the user would have allowed service providers the flexibility

to establish different usage levels for different individuals based on different factors (e.g., a more comprehensive service plan would have included a higher usage limit). SAMSUNG-1044, ¶¶[0050]-[0052], [0058]; SAMSUNG-1045, Abstract, ¶¶[0001]-[0020]; SAMSUNG-1003, ¶38.

Incorporating Rybak's techniques into the Bennett-Rakoshitz device would have been nothing more than the application of known techniques (e.g., monitoring aggregate per-application data usage) to a known structure (e.g., Bennett-Rakoshitz's devices) to yield predictable results (e.g., the monitoring of per-application data usage on the Bennett-Rakoshitz device). *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007). As Dr. Traynor explains, a POSITA would have expected success in implementing this combination because monitoring and tracking per-application data usage on a mobile device (such as the applications of Bennett) was known as of the Critical Date and would have involved only routine programming skill. SAMSUNG-1003, ¶39. Indeed, Rakoshitz's tool already monitors per-application data traffic with respect to pre-defined limits and would have served as a natural implementation point for Rybak's techniques. SAMSUNG-1046, 3:27-31, 5:46-48, 9:39-47, 12:20-33, FIG. 2. Moreover, Rybak discloses that its "usage control module" can be embodied in "logic or software instructions," like Rakoshitz's tool, and would not have required substantial modification to the hardware of the Bennett-Rakoshitz device. SAMSUNG-1044, ¶[0054]; SAMSUNG-1046,

9:24-27; SAMSUNG-1003, ¶39.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz and Rybak).

6. Analysis

[1.pre]

As an initial matter, the '918 patent does not define a "wireless end-user mobile device," but instead describes various devices that can implement its techniques, to include "**mobile devices**, such as phones, PDAs, computing devices, laptops, net books, tablets, **cameras**, **music/media players**, GPS devices, networked appliances, and any other networked device." SAMSUNG-1001, 40:28-

46[2]; SAMSUNG-1003, ¶51.

To the extent the preamble is limiting, Bennett discloses that its techniques can be implemented in a "mobile device," "video camera," and "remote video player" (all "***wireless end-user device[s]***" which communicate over wireless networks). SAMSUNG-1041, ¶¶[0078], *see also* ¶¶[0002], [0005], [0025], FIGS. 1, 4, 11; SAMSUNG-1003, ¶52.

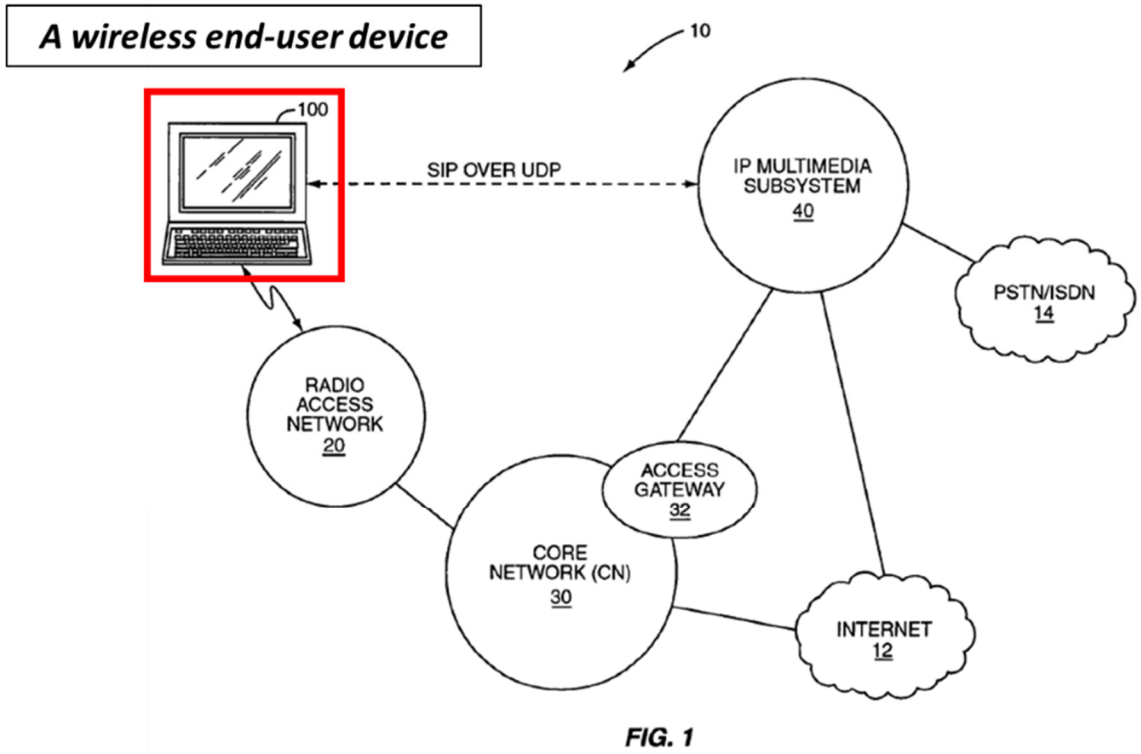


FIG. 1

SAMSUNG-1041, FIG. 1.

[2] All emphasis is added unless otherwise noted.

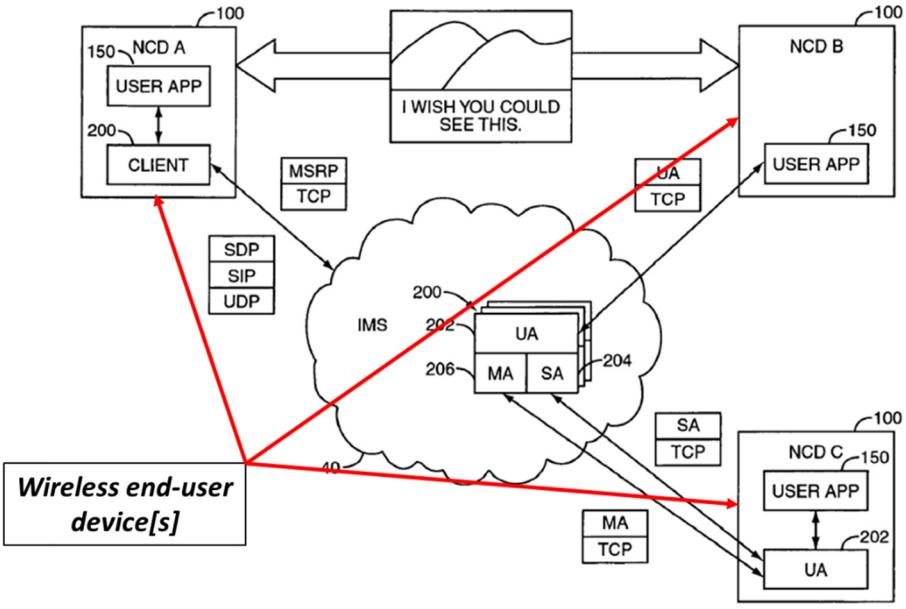


FIG. 4

SAMSUNG-1041, FIG. 4.

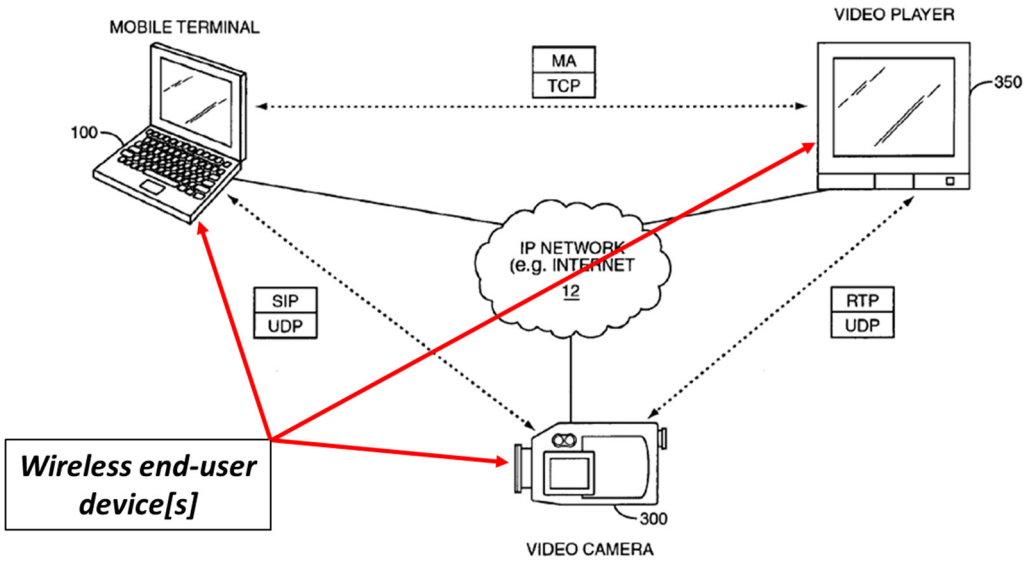


FIG. 11

SAMSUNG-1041, FIG. 11.

Bennett discloses a "media client 200" including a "user agent to communicate with a multimedia application in the networked communication device," a "signaling agent … to establish and maintain communication sessions," and a "media agent" which "performs media operations." SAMSUNG-1041, Abstract, ¶¶[0024]-[0026], [0029]-[0031], FIG. 3. Bennett's media client 200 is entirely contained within a "***wireless end-user device***." SAMSUNG-1041, ¶¶[0028], [0078], FIGS. 4, 11; SAMSUNG-1003, ¶53.

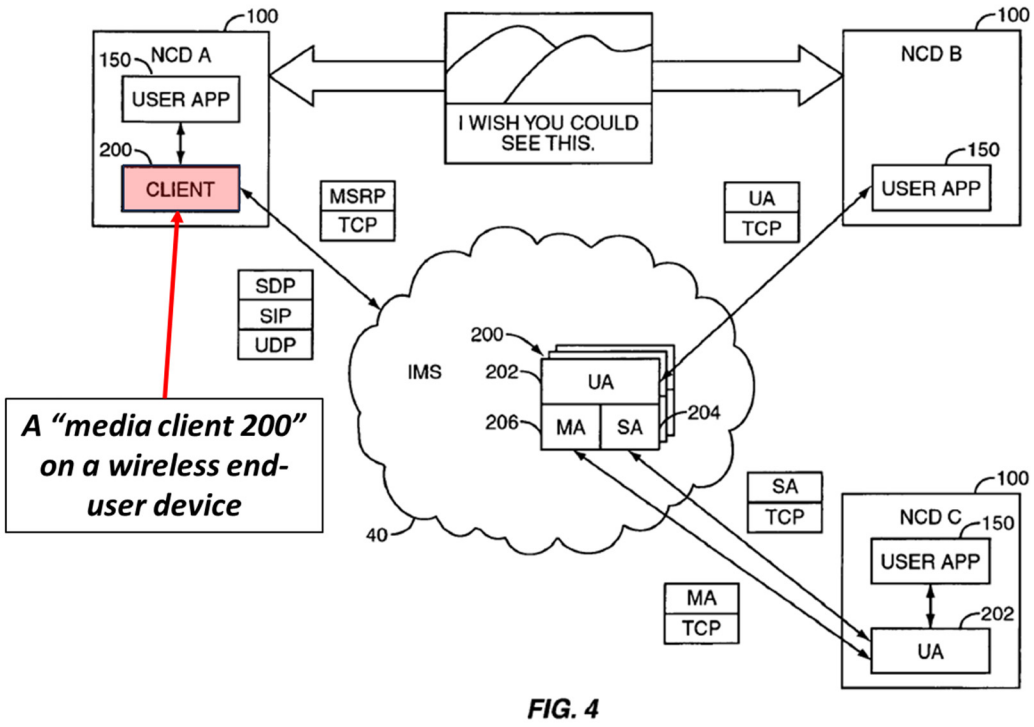


FIG. 4

SAMSUNG-1041, FIG. 4.

[1.1]

Bennett discloses that its mobile devices operate on various "mobile communication network[s]." SAMSUNG-1041, ¶[0017], FIG. 1; SAMSUNG-1003,

¶54. Bennett's networks include "General Packet Radio Services (GPRS) network[s]" and Universal Mobile Telecommunications Service ("UMTS") networks ("***wireless network[s]***"). *Id*.

As Dr. Traynor explains, a POSITA would have understood and found obvious that to communicate and retrieve media via these networks, Bennett's mobile devices would have had the ability to modulate and demodulate data using a "***wireless modem***." SAMSUNG-1003, ¶55. Indeed, it was well known before the Critical Date that ***wireless modem[s]*** were used to transmit data from mobile devices operating on wireless networks, including GPRS and UMTS networks, and that these modems were "***configurable to connect to a wireless network***." SAMSUNG-1047, ¶¶[0025], [0068]; SAMSUNG-1003, ¶55. Cassett corroborates Dr. Traynor's testimony and discloses that devices communicating in "GPRS" and "UMTS" networks included "wireless modems." *Id*.

Additionally, Dr. Traynor also explains that a POSITA would have understood and found obvious that mobile devices at the time of the Critical Date typically included ***wireless modem[s]*** that were "***configurable to connect to a wireless network***" as evidenced by multiple prior art references. SAMSUNG-1048, ¶¶[0034]-[0035], FIG. 2; SAMSUNG-1013, ¶¶[0125], [0130]; SAMSUNG-1003, ¶56. Indeed, Cole discloses a "mobile device" that includes a plurality of "***wireless modem[s]***," to include a "WWAN modem 230," a "WLAN modem 235," and a

"voice band modem 250." SAMSUNG-1048, ¶¶[0034]-[0035], FIG. 2. Rao discloses that "computing device[s] 102" included "network interface[s] 118," for example, a "modem." SAMSUNG-1050, ¶¶[0125], [0130]; SAMSUNG-1003, ¶56.

[1.2]

Bennett discloses that the media agent 200 is in communication with several "protocol stack[s]" ("***a network stack***") which are configured to transmit and obtain—or "stream"—"media" ("***configurable to receive and transmit data via the wireless modem and the wireless network***"). SAMSUNG-1041, ¶¶[0018], [0025], [0060], [0066], [0075]-[0076], FIGS. 3-4, 8-12[3]; SAMSUNG-1003, ¶57. As described above, communication over wireless networks on the Bennett mobile end-user device occurs via "***the wireless modem and the wireless network***." *See supra*, [1.1].

[3] Bennett's figures all denote "media client 200," thus indicating the same embodiment. SAMSUNG-1041, FIGS. 3-4, 8-12

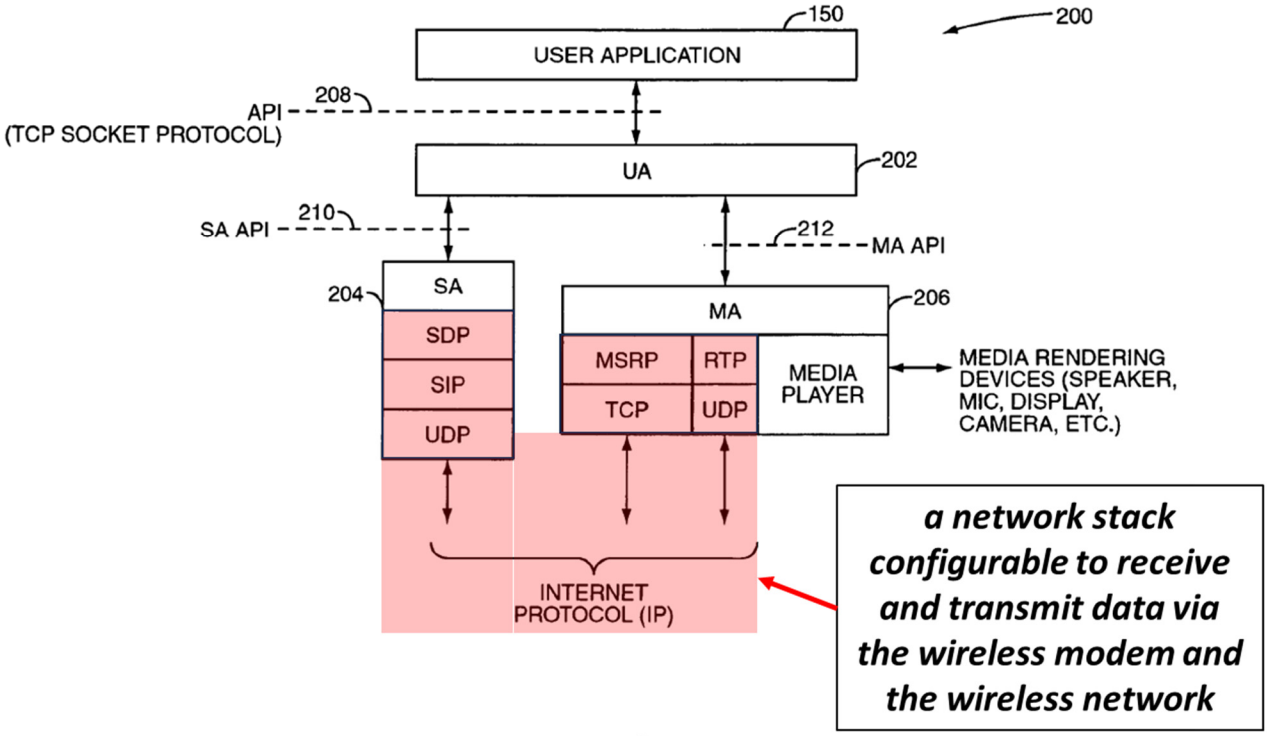


FIG. 3

SAMSUNG-1041, FIG. 3.

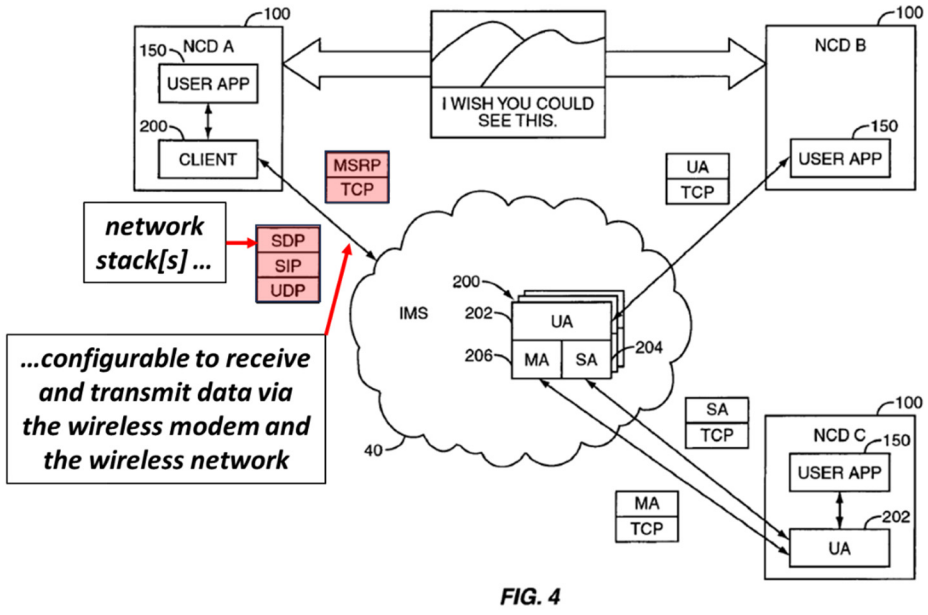


FIG. 4

SAMSUNG-1041, FIG. 4.

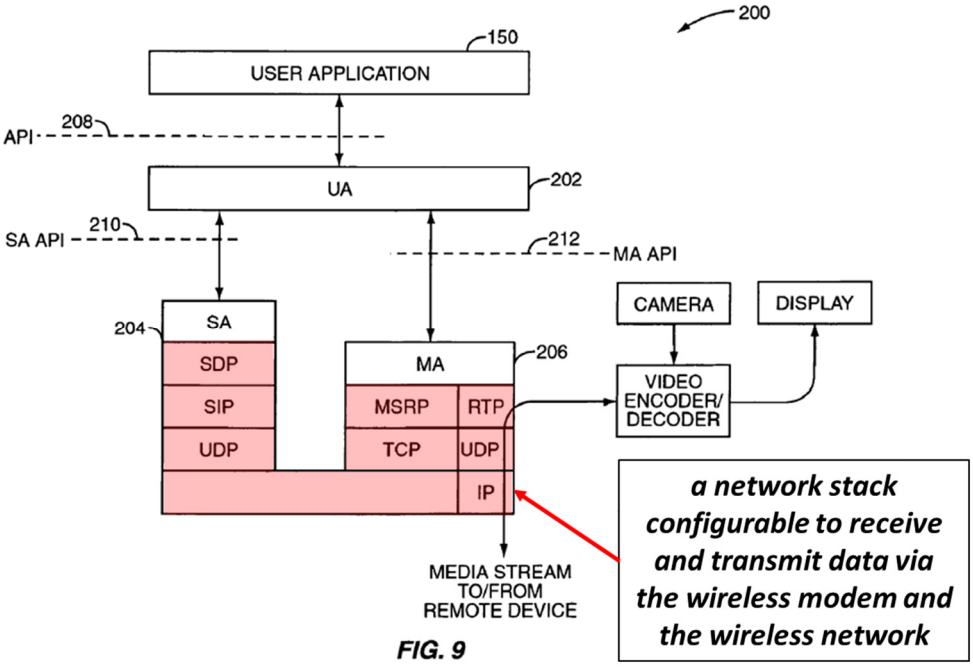


FIG. 9

SAMSUNG-1041, FIG. 9.

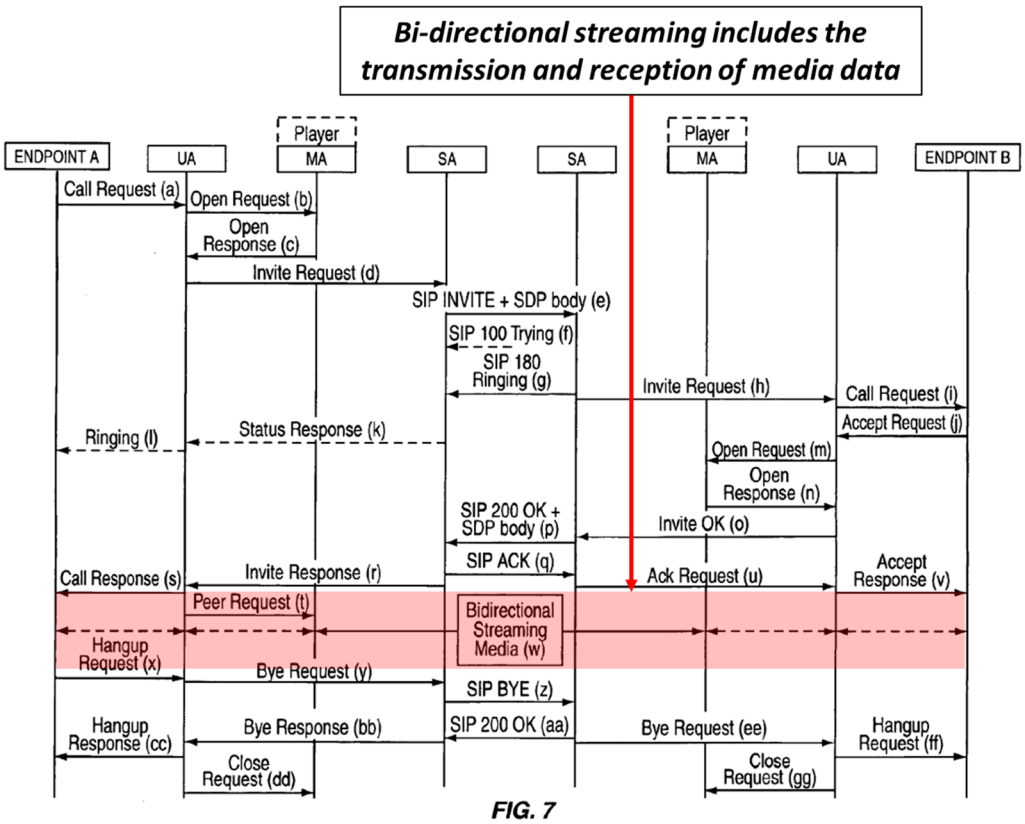


FIG. 7

SAMSUNG-1041, FIG. 7.

Similarly, the '918 patent depicts Internet Protocol ("IP"), Transmission Control Protocol ("TCP"), and User Datagram Protocol ("UDP") as part of a "device stack" (which as Dr. Traynor explains, is a "network stack"). SAMSUNG-1001, 2:21-26, FIGS. 12-13; SAMSUNG-1003, ¶58. The '918 Patent also frequently refers to "IP" techniques with respect to the "network stack." SAMSUNG-1001, 61:51-62, 109:22-26, 112:62-113:9.

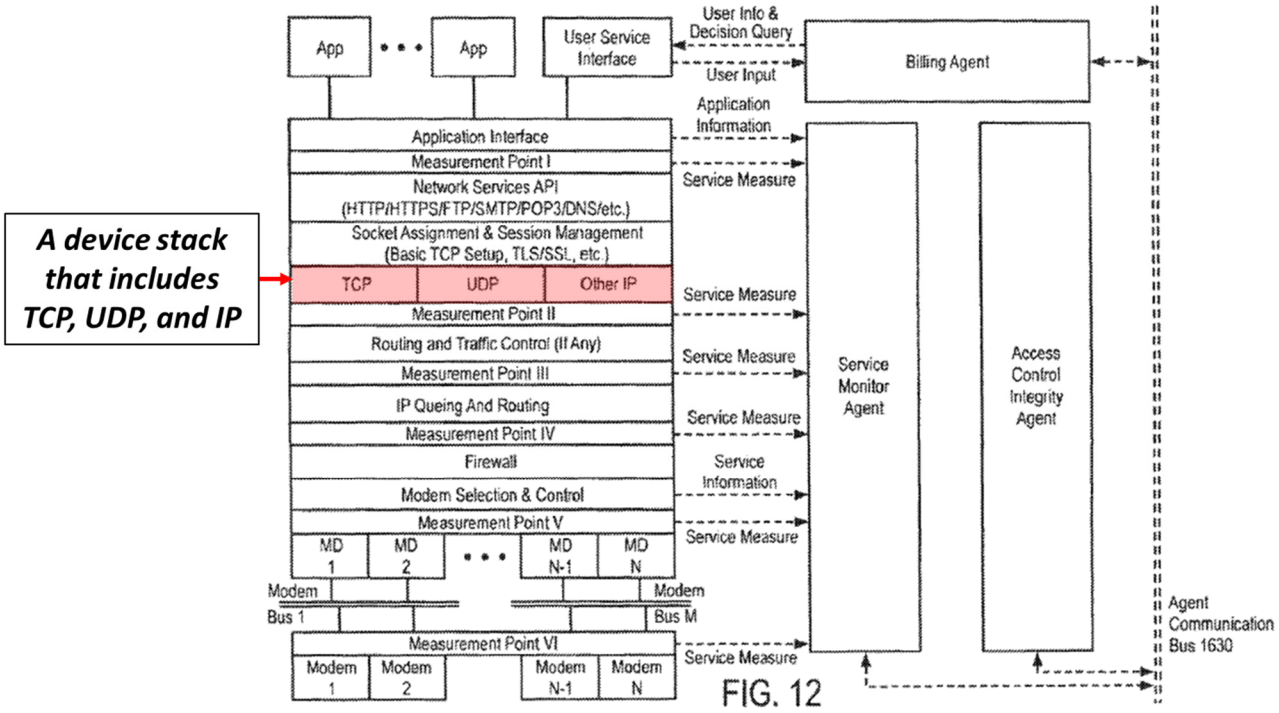


FIG. 12

SAMSUNG-1001, FIG. 12.

[1.3]

open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network

Bennett discloses the use of "Session Initiation Protocol (SIP)" for "establishing, modifying and terminating communication sessions between one or

more participants" ("***open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network***")[4]. SAMSUNG-1041, ¶¶[0018]-[0022]. Bennett discloses that SIP enables applications residing on the mobile terminal to "establish a communications session." SAMSUNG-1041, ¶[0022]; SAMSUNG-1003, ¶59. SIP sessions include "Internet multimedia conferences, Internet telephony calls, and multimedia distributions" that are performed using protocols such as "Real-time Transfer Protocol (RTP)" and "Message Session Relay Protocol (MSRP)." *Id*.

As Dr. Traynor explains, a POSITA would have recognized and found obvious that the protocols disclosed in Bennett would have included "***data packet flows***" as these protocols are examples of "packet switched services" that communicate data in a series of data packets. SAMSUNG-1003, ¶60; SAMSUNG-1041, ¶[0017]. Additionally, a POSITA would have recognized and found obvious that the communication of these "***data packet flows***" would have been "***via the network stack, the wireless modem, and the at least one wireless network***" as Bennett's media, included in the data packet flow, is retrieved over various wireless networks, described above, that use protocol

[4] Bennett discloses that other protocols may be used, for example, "H.323." SAMSUNG-1041, ¶[0018].

stacks and wireless modems. SAMSUNG-1003, ¶60; *see supra* [1.1], [1.2].

a first network stack Application Programming Interface (API), containing at least one first call accessible to each of a plurality of device applications, the first network stack API callable by each of the plurality of device applications

Bennett also discloses a "signaling agent (SA) 204" within its "media client 200" that "implements SIP and SDP protocols to handle signaling tasks" which include "setting up, modifying, and tearing down communication sessions, [and] negotiating session parameters" ("***open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network***"). SAMSUNG-1041, ¶¶[0025], [0031], [0033], [0040], [0043]-[0049], Table-2, FIGS. 3-10; SAMSUNG-1003, ¶61. The SA 204 is called by the "user agent (UA) 202" of the media client 200 using a "SA API 210" ("***a first network stack Application Programming Interface (API)***") in response to a request from a "user application 150" ("***the first network stack API callable by each of the plurality of device applications***"). *Id*.

The SA API 210 includes various "requests" ("***at least one first call accessible to each of a plurality of device applications***") to perform actions in SIP sessions, including "INVITE" requests ("***open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network***") which identify a source of data or a recipient. SAMSUNG-1041, ¶¶[0031], [0033], [0040], [0045]-[0046], FIGS. 6-7, Table-2; SAMSUNG-1003,

¶62. Bennett frequently refers to "application**s**" operating on its devices and says that "any" application 150 can use its techniques ("***a plurality of device applications***"). SAMSUNG-1041, ¶¶[0018], [0022], [0029], [0075]. Similarly, both Rakoshitz and Rybak's techniques are applied for "***each of a plurality of device applications***," and these techniques would have been incorporated into the Bennett-Rakoshitz-Rybak device. SAMSUNG-1046, 9:39-62 (traffic is monitored "by application"), 12:20-33 (the FAST module classifies traffic by "parameters," including the "application"); SAMSUNG-1044, ¶¶[0017]-[0019] (describing multiple "application servers" providing services to client devices), [0023]-[0024] (describing an "application layer" of multiple applications), [0044]-[0045] (describing multiple applications), FIG. 2; SAMSUNG-1003, ¶62.

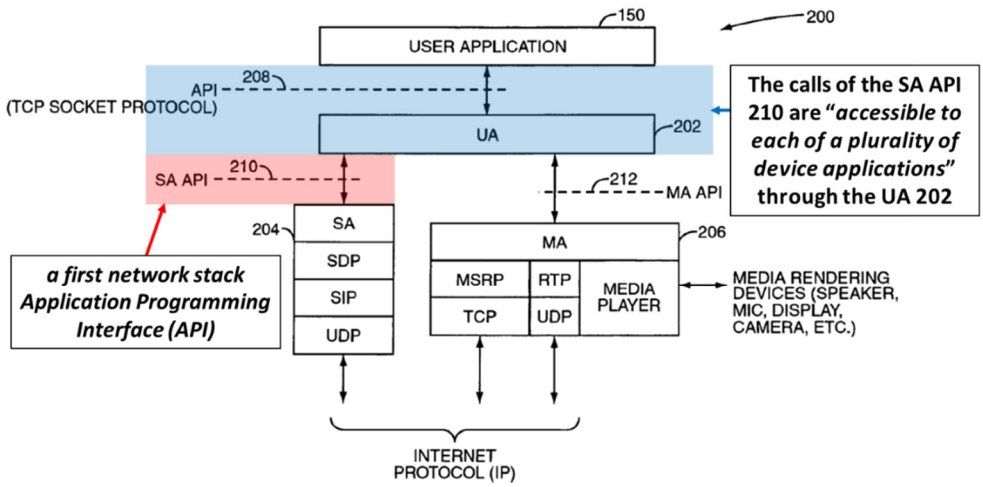


FIG. 3

SAMSUNG-1041, FIG. 3.

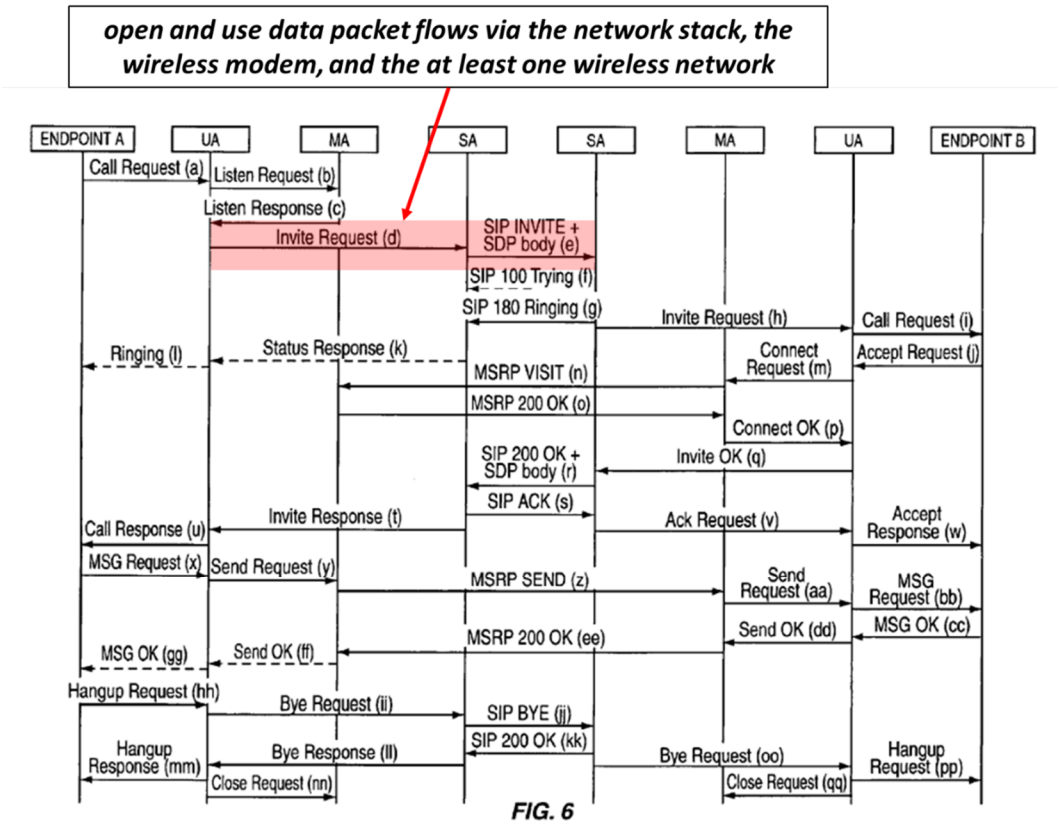


FIG. 6

SAMSUNG-1041, FIG. 6.

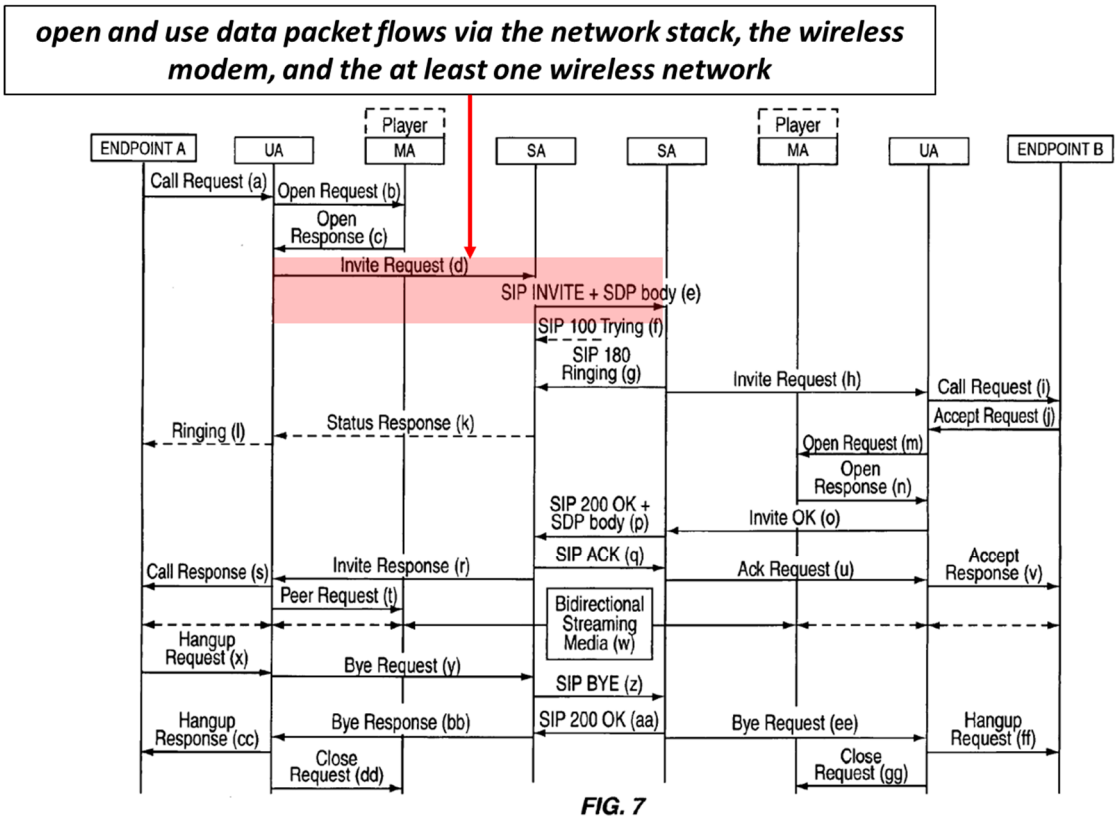


FIG. 7

SAMSUNG-1041, FIG. 7.

To the extent Patent Owner argues that the calls of the "***first network stack Application Programming Interface (API)***" must be directly "***accessible to each of a plurality of device applications***," or that the application must directly call the "***first***" API, the '918 Patent does not support such a narrow interpretation. SAMSUNG-1003, ¶63. On the contrary, the process of applications indirectly calling APIs is depicted in the '918 Patent in multiple embodiments. SAMSUNG-1001, 110:12-111:17, 116:39-58; 119:49-60, FIGS. 30, 32, 35; SAMSUNG-1003, ¶63. Indeed, the '918 Patent depicts multiple embodiments

where an API (e.g., a "socket") is called by a program module other than the requesting "application," indicating that such an interpretation is within the scope of the claims. *Id*.

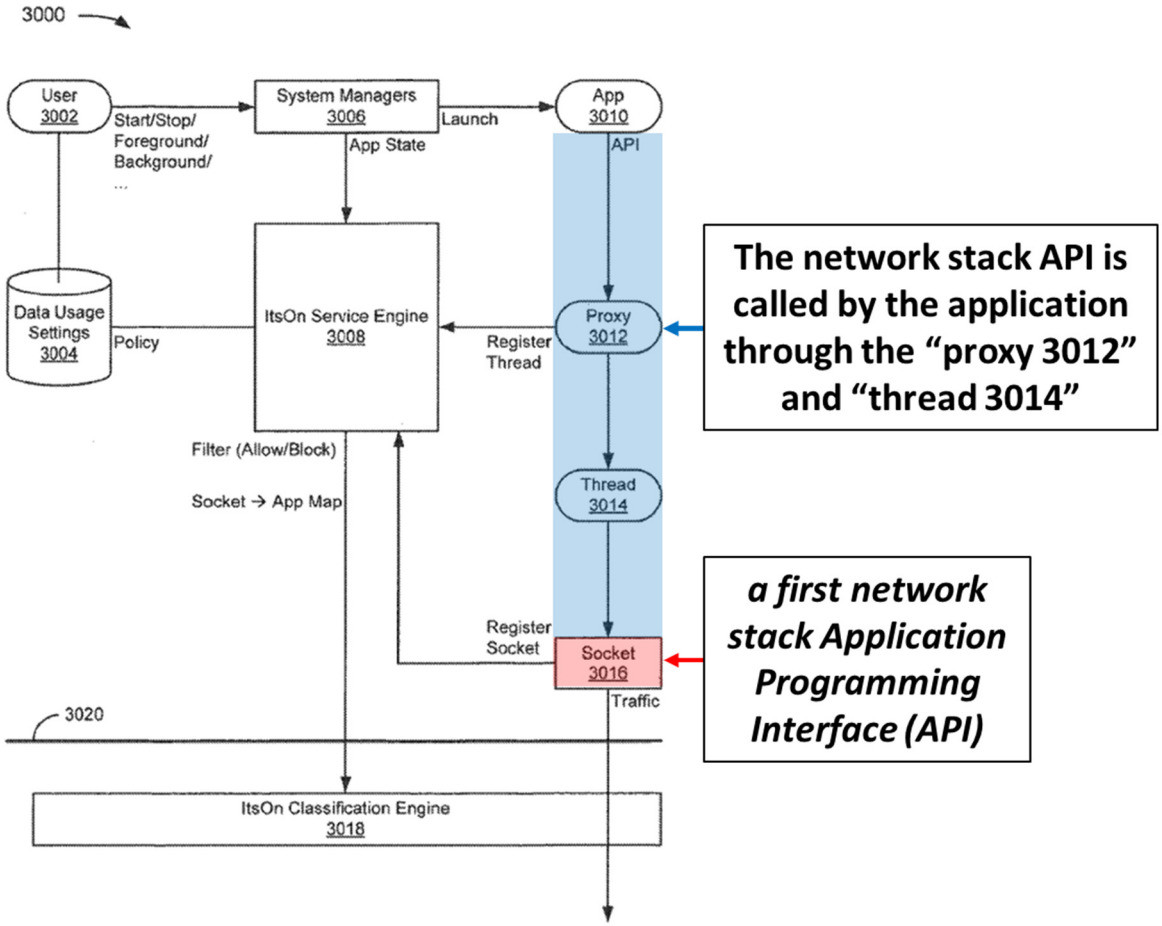


FIG. 30

SAMSUNG-1001, FIG. 30.

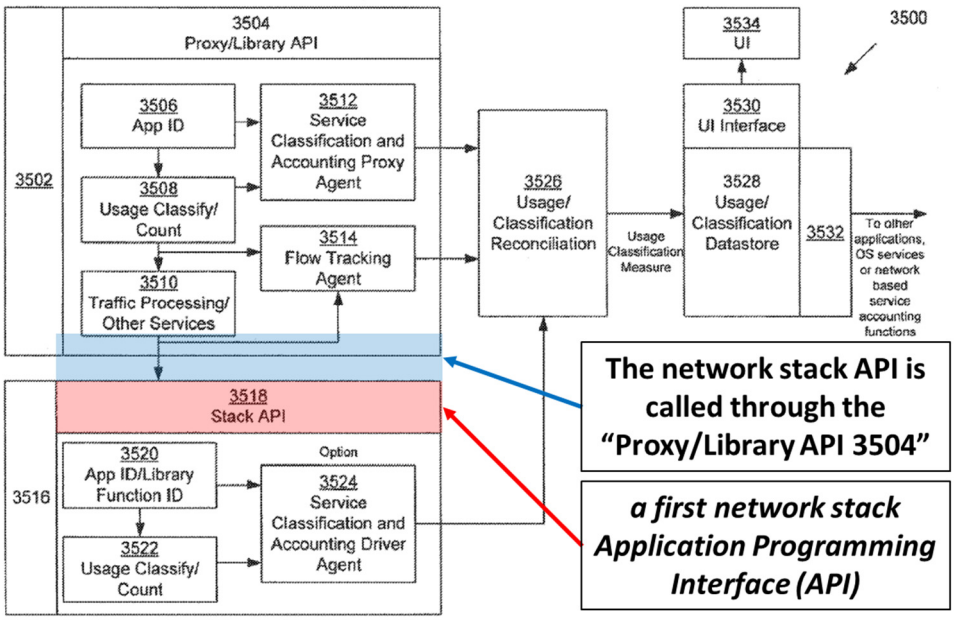


FIG. 35

SAMSUNG-1001, FIG. 35.

Moreover, the '918 Patent describes an "application service interface layer" that is "above the standard networking stack API"—positioned between the API and the requesting applications (much like Bennett's UA 202)—further confirming that the APIs need only be "***accessible***" to the applications when called (e.g., capable of being used). SAMSUNG-1001, 62:10-51, FIG. 12-13; SAMSUNG-1041, ¶[0025], FIG. 3. Even further, the '918 Patent describes "network based APIs" that are located "on a network element"—completely separate from the device itself. SAMSUNG-1001, 75:26-37; SAMSUNG-1003, ¶64.

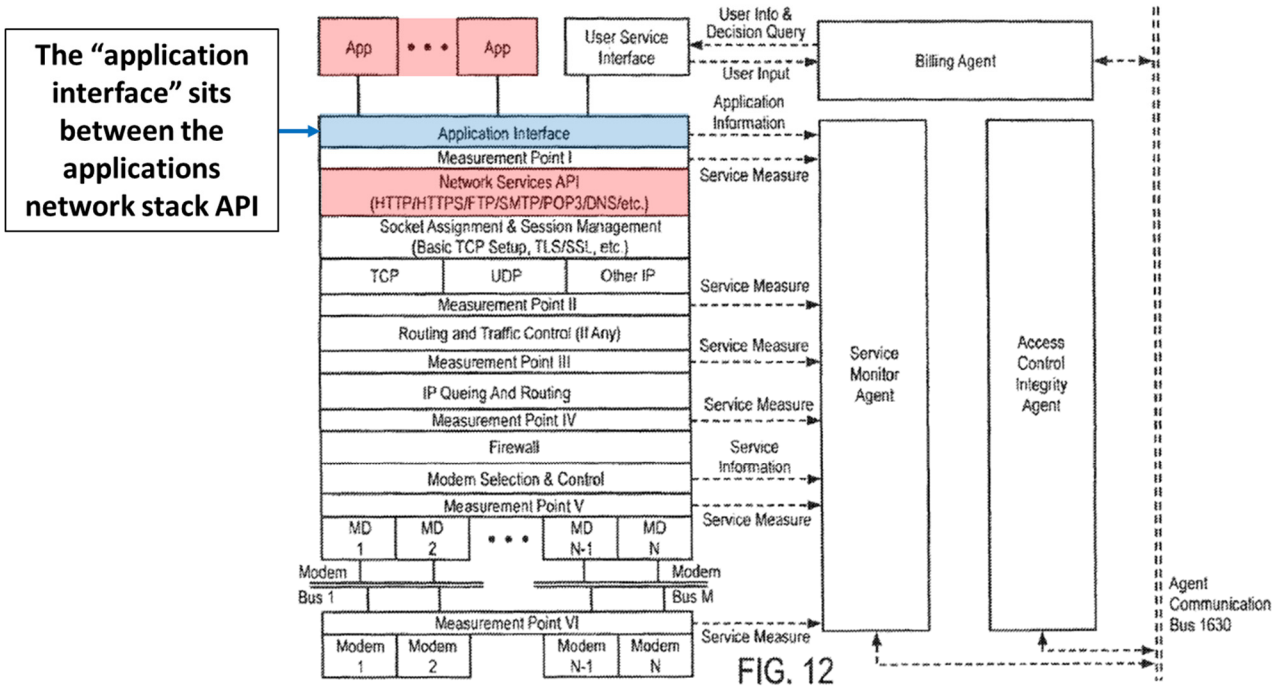


FIG. 12

SAMSUNG-1001, FIG. 12.

[1.4]

a data transfer request for a media object

The '918 Patent describes "media download[s]," "media streaming," "audio files" played by a "media player," "streaming audio," "video conference[s]," Voice over Internet Protocol ("VoIP"), "multimedia data," and "instant messaging" as example application activities that involve the transfer of media ("***a data transfer request for a media object***"). SAMSUNG-1001, 72:37-50, 107:34-46, 111:44-112:17. Bennett discloses similar "***media objects***" retrieved after a "***data transfer request***," for example, "voice over IP

(VoIP), video and audio streaming, … videoconferencing, [and] instant messaging." SAMSUNG-1041, ¶¶[0017]-[0018], [0024], [0070], [0076]; SAMSUNG-1003, ¶65.

a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications

Bennett discloses that its media client 200 includes a "media agent (MA …) 206" that "manages media connections, routes media according to media type and user settings, and invokes media players to process media as required" ("***make a data transfer request for a media object***"). SAMSUNG-1041, ¶¶[0025], [0050]-[0056], Table-3, FIGS. 3-10. The MA 206 is called by the UA 202 of the media client 200 using a "MA API 212" ("***a second API***") in response to a request from a "user application 150" ("***the second API callable by each of the plurality of device applications***"). SAMSUNG-1041, ¶¶[0031], [0050]-[0056], Table-3, FIGS. 3-10; SAMSUNG-1003, ¶66.

The MA API 212 includes various "requests" ("***at least one second call accessible to each of the plurality of device applications***") to send and receive media, including "LISTEN," "SEND," and "OPEN" requests ("***make a data transfer request for a media object***"). SAMSUNG-1041, ¶¶[0031], [0033], [0040], [0045]-[0046], FIGS. 6-7, Table-2; *see supra* [1.3] (describing a "***plurality of device applications***"); SAMSUNG-1003, ¶67.

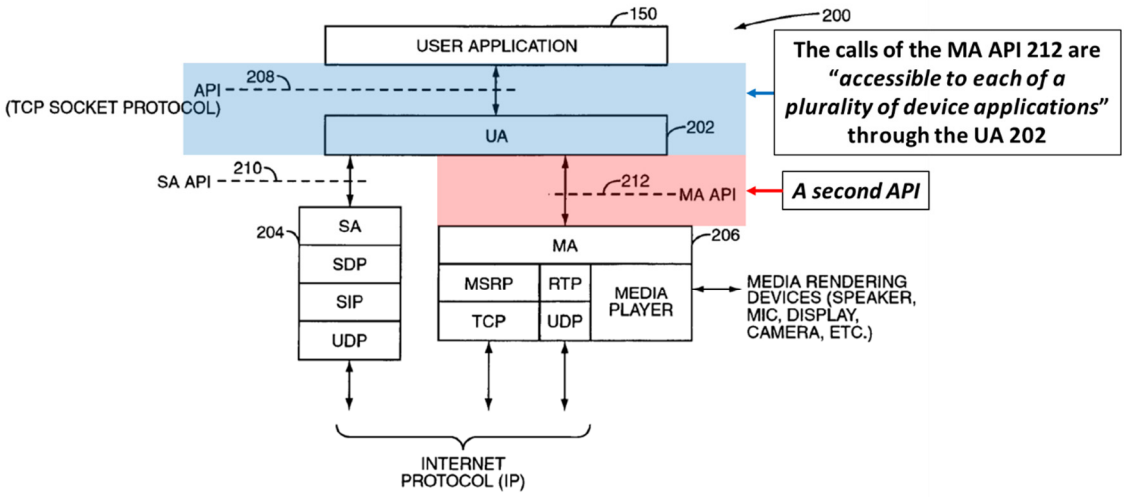


FIG. 3

SAMSUNG-1041, FIG. 3.

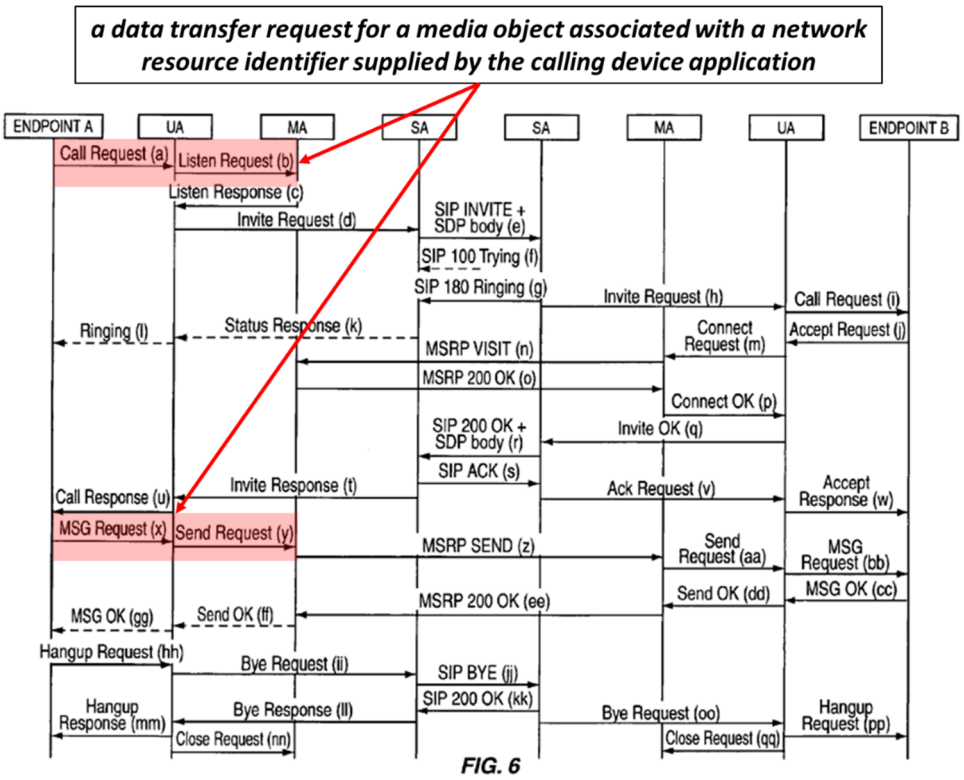


FIG. 6

SAMSUNG-1041, FIG. 6.

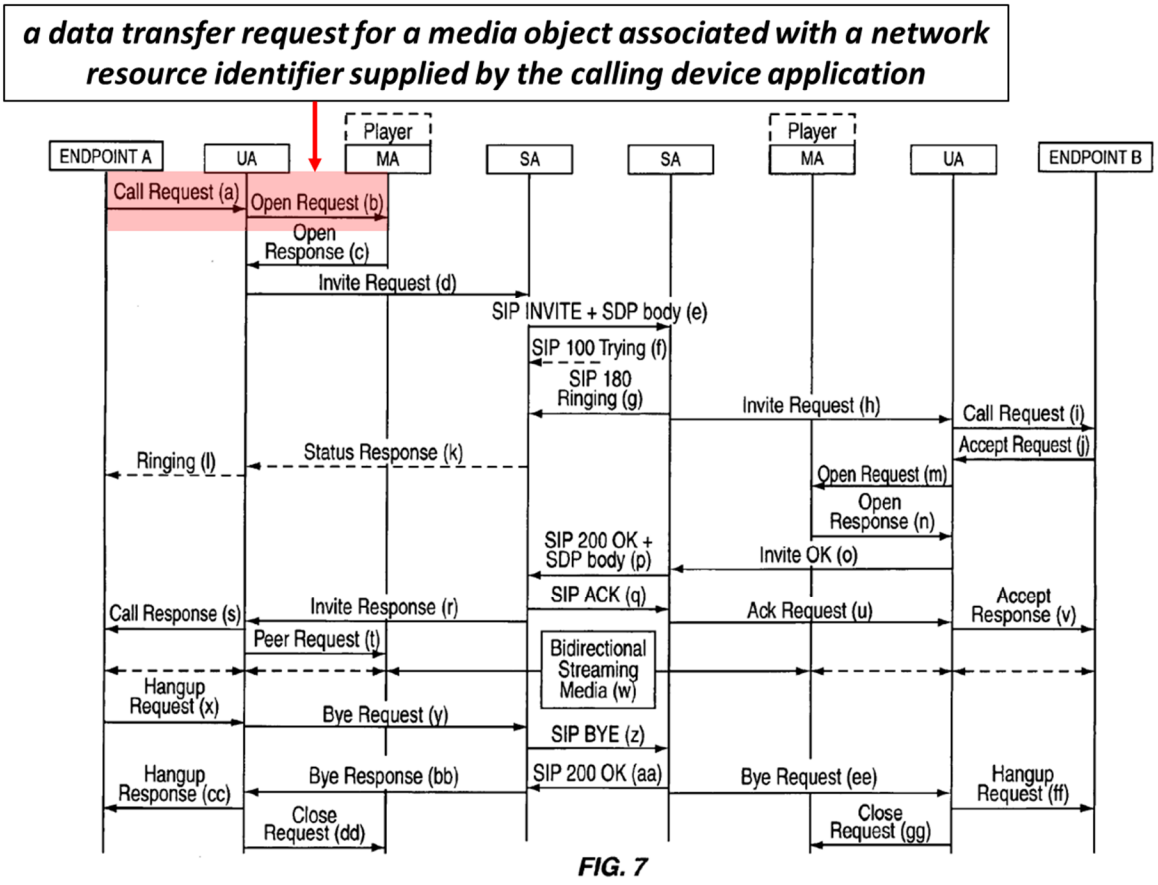


FIG. 7

SAMSUNG-1041, FIG. 7.

To the extent Patent Owner argues that the calls of the "***second API***" must be directly "***accessible to each of a plurality of device applications***," or that the application must directly call the "***second***" API, the '918 Patent does not support such a narrow interpretation. SAMSUNG-1003, ¶68. On the contrary, the process of applications indirectly calling APIs is depicted in the '918 Patent in multiple embodiments. SAMSUNG-1001, 110:12-111:17, 116:39-58; 119:49-60, FIGS. 30, 32, 35; *see supra* [1.4]; SAMSUNG-1003, ¶68.

a network resource identifier supplied by the calling device application

The '918 Patent gives examples of "***network resource identifier[s]***" that include: "(e.g., an IP address, a URL, a remote file name or address, a stream name, an object name, or any combination of these identifiers) that identifies a source (or a proxy to the source) of the data to be transferred or a data object to be transferred." SAMSUNG-1001, 112:43-47; SAMSUNG-1003, ¶69.

Bennett discloses that its MA API 212 calls, for example the OPEN request, includes "a network address of a remote host from which media connections will be accepted" ("***a network resource identifier***") that is provided by the application when it calls the UA 202 (e.g., via a "CALL" request) ("***supplied by the calling device application***"). SAMSUNG-1041, ¶¶[0034], [0050]-[0056], [0086], Table-3. Applications also provide a "userid" and a "port" to call via the CALL request ("***a network resource identifier***"). SAMSUNG-1041, ¶[0084], Table-1; SAMSUNG-1003, ¶70.

Bennett's examples of "***network resource identifier[s]***" are consistent with the '918 Patent, and include: "a userID, alias, or fully qualified network address" ("an IP address" and "remote file … address"). SAMSUNG-1041, ¶[0034]. Bennett also provides example addresses of "call alice@ims.net: 5060 video/h263" and "call 10.0.0.1:5060 video/h263" (a "remote file … address"). *Id*. Additionally, all the aforementioned examples "identif[y] a source (or a proxy to the source) of the

data to be transferred or a data object to be transferred." SAMSUNG-1041, ¶[0034]; SAMSUNG-1001, 112:43-47. Bennett also describes content located at Uniform Resource Identifiers ("URIs"), which a POSITA would have recognized included Uniform Resource Locators (URLs). SAMSUNG-1041, Table-1; SAMSUNG-1003, ¶71.

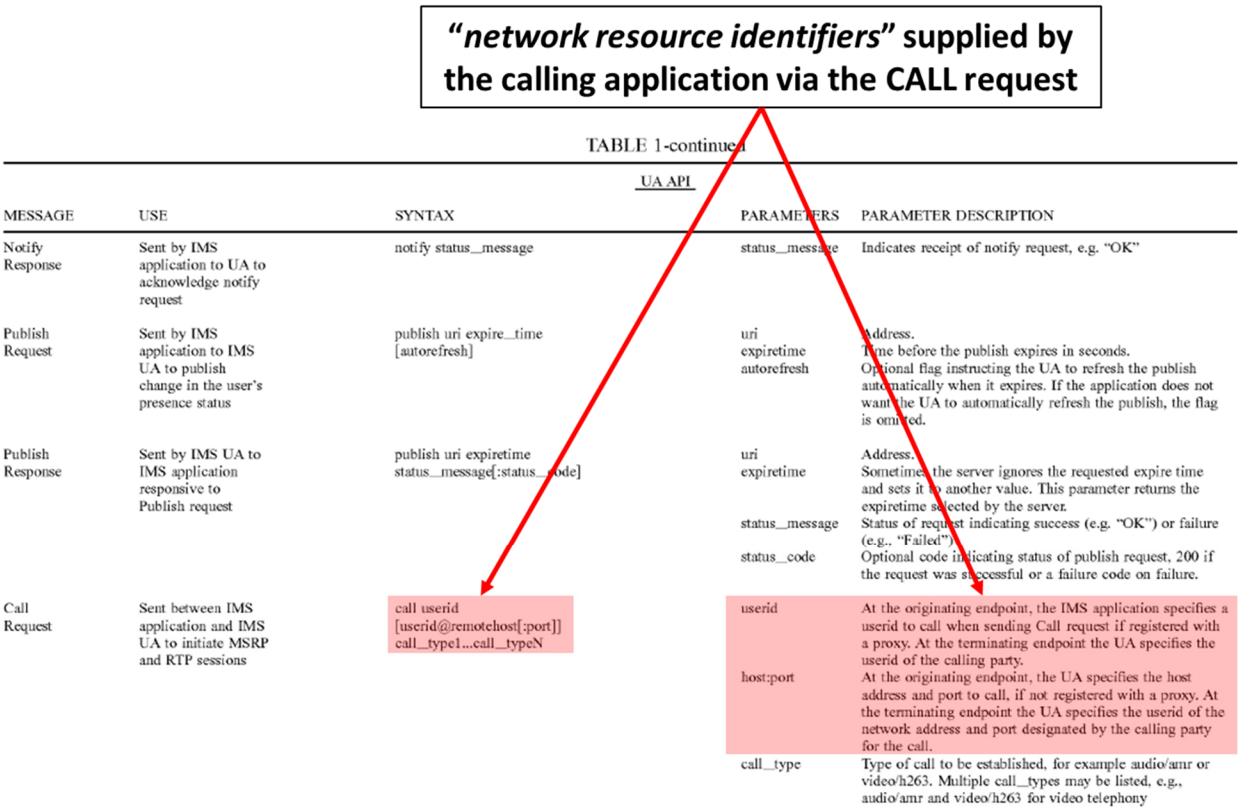


TABLE 1-continued

UA API

MESSAGE	USE	SYNTAX	PARAMETERS	PARAMETER DESCRIPTION
Notify Response	Sent by IMS application to UA to acknowledge notify request	notify status_message	status_message	Indicates receipt of notify request, e.g. "OK"
Publish Request	Sent by IMS application to IMS UA to publish change in the user's presence status	publish uri expire_time [autorefresh]	uri expiretime autorefresh	Address. Time before the publish expires in seconds. Optional flag instructing the UA to refresh the publish automatically when it expires. If the application does not want the UA to automatically refresh the publish, the flag is omitted.
Publish Response	Sent by IMS UA to IMS application responsive to Publish request	publish uri expiretime status_message[:status_code]	uri expiretime status_message status_code	Address. Sometimes the server ignores the requested expire time and sets it to another value. This parameter returns the expiretime selected by the server. Status of request indicating success (e.g. "OK") or failure (e.g., "Failed"). Optional code indicating status of publish request, 200 if the request was successful or a failure code on failure.
Call Request	Sent between IMS application and IMS UA to initiate MSRP and RTP sessions	call userid [userid@remotehost[:port]] call_type1...call_typeN	userid host:port call_type	At the originating endpoint, the IMS application specifies a userid to call when sending Call request if registered with a proxy. At the terminating endpoint the UA specifies the userid of the calling party. At the originating endpoint, the UA specifies the host address and port to call, if not registered with a proxy. At the terminating endpoint the UA specifies the userid of the network address and port designated by the calling party for the call. Type of call to be established, for example audio/amr or video/h263. Multiple call_types may be listed, e.g., audio/amr and video/h263 for video telephony

SAMSUNG-1041, Table-1.

The OPEN request of the MA API includes the "*network resource identifier*" supplied by the calling application

TABLE 3

MA API

MESSAGE	USE	SYNTAX	PARAMETERS	PARAMETER DESCRIPTION
Listen Request	Sent by UA to MA to initiate a MSRP session. The MA opens a TCP listener in response to the Listen request.	listen [remotehost]	remotehost	Optional parameter specifies address from which connections can be made.
Listen Response	Sent by MA to UA as final response to Listen request. The Listen response includes the address and port of the TCP connection opened for the MSRP session.	listen status_message[:status_code] host:port	status_message	Status of listen request indicating success (e.g. "OK") or failure (e.g., "Failed")
			status_code	Optional code indicating status of Listen request, 200 if the request was successful or an error code on failure.
			host:port	Network address of host and port number for port opened in response to Listen Request. Returned when Listen request is successful. Omitted when Listen request fails.
Open Request	Sent by UA to MA to initiate RTP session. The MA opens a TCP connection in response to the Open request.	open [remotehost]	remotehost	Optional address specifies address from which connections can be made.

SAMSUNG-1041, Table-3.

[1.5]

Bennett discloses that its media client 200 includes a "media agent (MA …) 206" ("***a media service manager***") that "implements the message session relay protocol (MSRP) and the Real-Time Transport Protocol (RTP)" and "manages media connections, routes media according to media type and user settings, and invokes media players to process media as required" ("***manage network data transfers for the media object by interfacing with the network stack to retrieve the media object***"). SAMSUNG-1041, ¶¶[0025], [0050]-[0056], Table-3, FIGS. 3-10; SAMSUNG-1003, ¶72.

The MA 206 is called by the UA 202 of the media client 200 using a "MA API 212" ("***prompted by the second call***") in response to a request from a

"user application 150." SAMSUNG-1041, ¶¶[0031], [0050]-[0056], Table-3, FIGS. 3-10. Additionally, the MA 206 uses "TCP and/or UDP over IP for transport of RTP and MSRP messages" and retrieves media that "passes up through the IP, UDP and RTP stacks" prior to being played at a media player or decoder ("***interfacing with the network stack to retrieve the media object***"). SAMSUNG-1041, ¶¶[0025], [0076]-[0079]. Additionally, as described above, Bennett's media is retrieved from "remote host[s]" over wireless networks (e.g., "GPRS") through the use of a corresponding wireless modem (such that Bennett's media is retrieved "***via the wireless modem and the wireless network***"). SAMSUNG-1041, ¶[0017], [0054], FIG. 1; *see supra*, [1.1]; SAMSUNG-1003, ¶73.

As described above, requests from applications include a "***network resource identifier***" that is "***associated***" with the "***media object***." *See supra*, [1.4]; SAMSUNG-1003, ¶74.

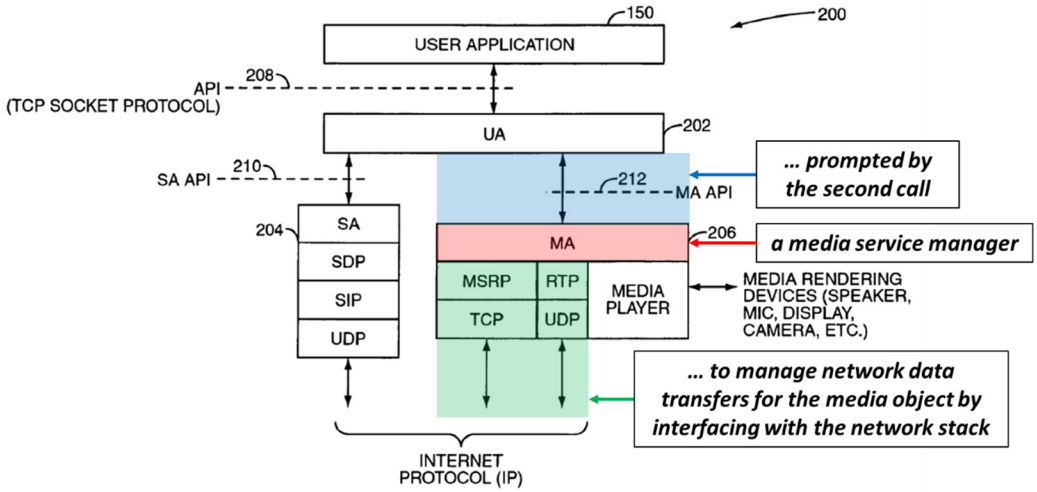


FIG. 3

SAMSUNG-1041, FIG. 3.

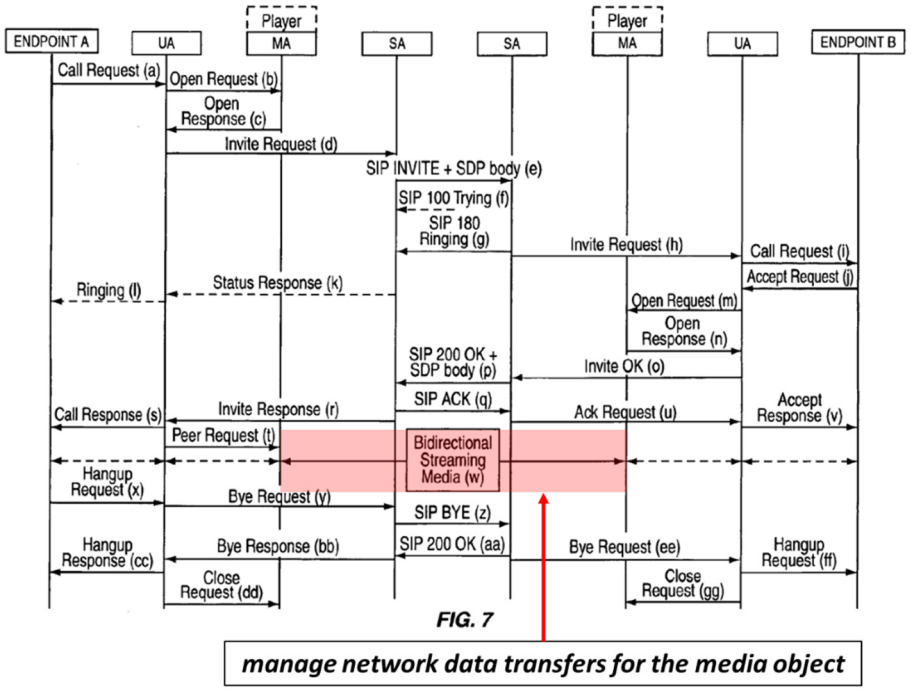


FIG. 7

manage network data transfers for the media object

SAMSUNG-1041, FIG. 7.

[1.6]

Rakoshitz discloses that its network monitoring tool "performs inbound and

outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations." SAMSUNG-1046, 9:18-48, FIG. 2; *see supra* §III.A.2. Additionally, Rybak discloses resource monitoring and control with a "usage control module 216" that "calculat[es] usage statistics based on the resource consumption data and the service plan profile." SAMSUNG-1044, ¶¶[0022]-[0029], FIGS. 2-3; SAMSUNG-1003, ¶75.

one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object

Rakoshitz discloses that its network monitoring tool "performs inbound and outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations" using "FAST" and "FAIR" modules (each "***one or more service classification and measurement agents***"). SAMSUNG-1046, 9:18-48, FIG. 2. For example, the "FAST" module within Rakoshitz's tool "provides for classification 203 of information such as parameters 213 including application" and "measurement 219 of various parameters" ("***associate wireless network data usage … with the device application***"). SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13 (depicting an example graph of "bandwidth consumption" for different "services"). Using Rybak's techniques, Rakoshitz's tool would have additionally "calculat[ed] usage

statistics based on the resource consumption data" for each application streaming media ("***the device application that requests the data transfer for the media object***"), to include "megabytes of data" consumed by the application ("***network data usage for the media object network data transfers***"). SAMSUNG-1044, ¶¶[0022]-[0029], [0033], FIGS. 2-3, 7; *see supra* §III.A.5; SAMSUNG-1003, ¶76.

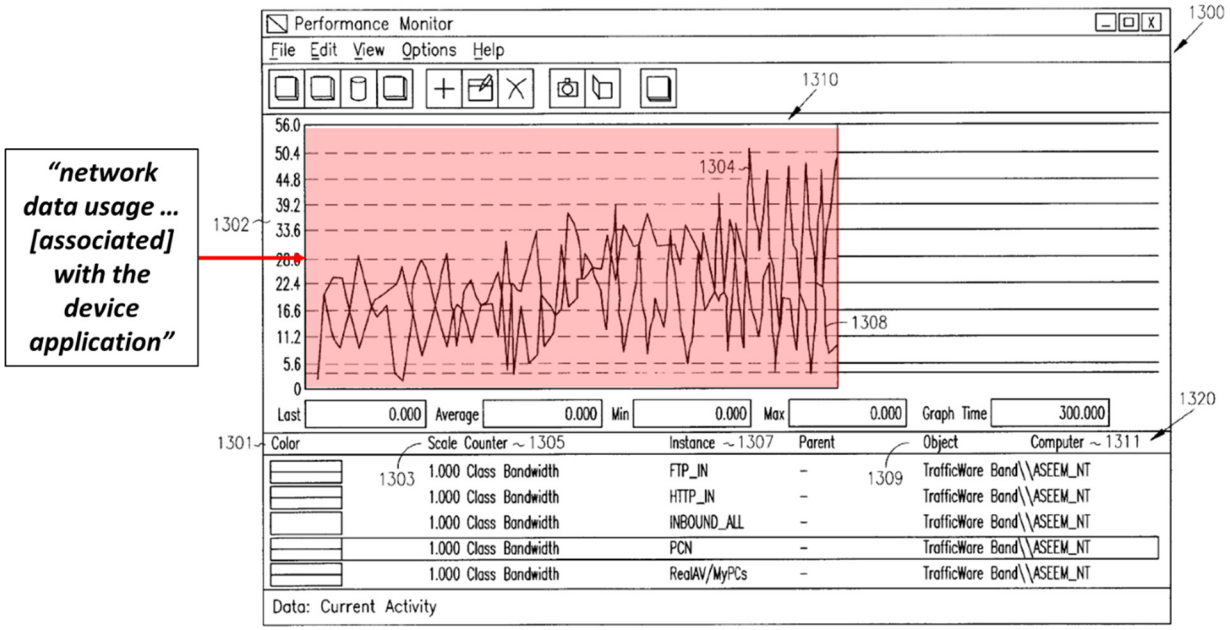


FIG. 13

SAMSUNG-1046, FIG. 13.

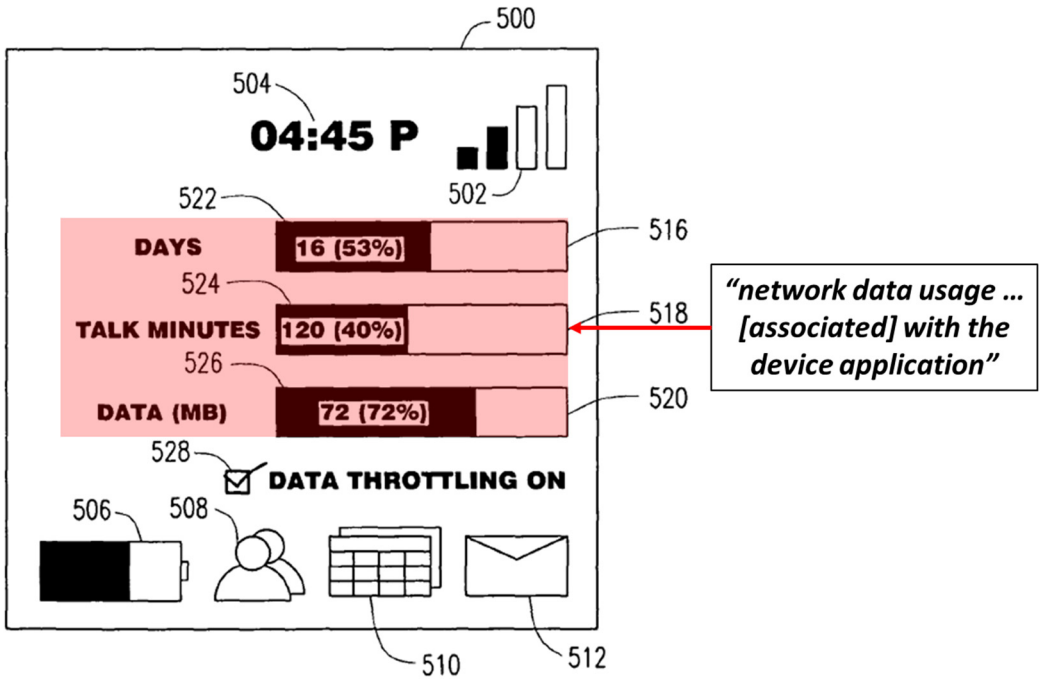


FIG. 7

SAMSUNG-1044, FIG. 7.

In combining Rakoshitz and Rybak's techniques into Bennett's device, as explained above, a POSITA would have found it obvious to leverage Rakoshitz and Rybak's monitoring and tracking of application data usage to monitor and associate "***media object network data transfers***" performed via the MA API 212 with "***the device application that requests the data transfer for the media object***" as these transfers would have resulted in data usage that would potentially be chargeable to the user of the Bennett-Rakoshitz-Rybak device. *See supra*, §III.A.5; SAMSUNG-1003, ¶77.

For example, in the combination, Rakoshitz's "FAST" module classifies traffic by application, to include "[s]treaming multimedia applications," which

stream "real-time audio and video" via Bennett's MA 206 and MA API 212 ("***media object network data transfers***"). SAMSUNG-1046, 12:20-33, 14:61-67, 20:15-30; SAMSUNG-1003, ¶78. Given that Rakoshitz classifies traffic by application, this "real-time audio and video" would have been associated to an application by the FAST module to monitor data usage by that application ("***associate wireless network data usage for the media object network data transfers with the device application***"). *Id*.

to associate wireless network data usage for respective data packet flows opened and used via the first network stack API with the device application opening such respective data packet flow,

Additionally, as explained above, a POSITA would have found it obvious to leverage Rakoshitz and Rybak's monitoring and tracking of application data usage to monitor and associate "***respective data packet flows opened and used***" via the SA API 210 with "***the device application opening such respective data packet flow***" as these packet flows would have resulted in data usage that would potentially be chargeable to the user of the Bennett-Rakoshitz-Rybak device. SAMSUNG-1046, 9:18-48, FIG. 2; *see supra*, §III.A.5; SAMSUNG-1003, ¶79.

As Dr. Traynor explains above, a POSITA would have recognized and found obvious that the protocols disclosed in Bennett would have included "***data packet flows***" as these protocols are examples of "packet switched services" that communicate data in a series of data packets. SAMSUNG-1003,

¶80; SAMSUNG-1041, ¶[0017]; *see supra* [1.3]. For example, Rakoshitz describes that traffic is "a flow of information or data or packets of information" ("***respective data packet flows***") which is "classifie[d]" by "application" ("***associate wireless network data usage for respective data packet flows … with the device application***"). SAMSUNG-1046, 12:12-58, 15:57-67. Rakoshitz then measures "parameters" associated with each classified flow of information to determine if a "policy" should be applied based on the measurement (e.g., "throttling" an application's data usage, as disclosed in Rybak). SAMSUNG-1046, 16:1-35; SAMSUNG-1044, ¶¶[0037]-[0042]. In the combination, the tool of the Bennett-Rakoshitz-Rybak device would have measured data usage associated with the "flow" of information (communication sessions established via the SA 204 and SA API 210—"***respective data packet flows***") classified to each application ("***with the device application opening such respective data packet flow***"). *Id*. Additionally, as described above, because Rakoshitz's tool is "coupled" to an API interface (the UA, SA, and MA APIs of Bennett in the combination), the tool's measurement and classification of usage would have been performed for "***data packet flows opened and used via the first network stack API***." SAMSUNG-1046, Abstract, 9:18-24, 12:12-58, Claim 1; *see supra*, §III.A.2-3; SAMSUNG-1003, ¶80.

and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API.

Rybak's usage control module "acquires the quantity of current period usage of at least one limited wireless resource" for each of a plurality of applications, to include "on-peak cellular voice minutes, megabytes of data or quantity of SMS messages" ("***track an aggregate wireless network data usage attributable to each of the plurality of device applications***"). SAMSUNG-1044, ¶¶[0022]-[0029], [0033], FIGS. 2-3, 7; *see supra* [1.3]. As described above, Rakoshitz classifies network traffic by application, and Rybak's techniques of tracking the quantity of data usage would have similarly been classified by application in the combination as Rakoshitz teaches ("***for each of the plurality of device applications***…"). SAMSUNG-1046, 12:12-58, 14:61-67, 15:57-67, 20:15-30; SAMSUNG-1003, ¶81. Additionally, as described above, because Rakoshitz's tool is "coupled" to an API interface, data usage would have been measured for "***both the first network stack API and the second API***" (the SA and MA APIs of Bennett) as both APIs would have consumed data to establish communication sessions and stream media. SAMSUNG-1046, Abstract, 9:18-24, 12:12-58, Claim 1; *see supra*, §§III.A.2-3, [1.3]-[1.4]; SAMSUNG-1003, ¶81.

Rybak discloses that this aggregate usage is measured with respect to a "mobile communication plan profile associated with a subscriber" that includes "a limit

of mobile communication resource usage" ("***reconcile wireless network data usage for each of the plurality of device applications***"). SAMSUNG-1044, ¶¶[0003], [0030]-[0042], FIG. 4. As an example, with respect to reconciling data usage, Rybak discloses that corrective action can be taken for applications that exceed the usage limit (e.g., "throttling" an application's network access). SAMSUNG-1044, ¶¶[0037]-[0042]. In the Bennett-Rakoshitz-Rybak combination, as described above, the combined device would have "***reconcile[d]***" data usage per application against an "***aggregate***" usage limit, for example, to prevent a user from exceeding a predefined data limit specified by a service plan when streaming media (e.g., by throttling or restricting an application's network access). SAMSUNG-1044, ¶¶[0033]-[0035]; SAMSUNG-1046, 12:12-58, 14:61-67, 15:57-67, 20:15-30; *see supra*, §§III.A.3, III.A.5; SAMSUNG-1003, ¶82.

[9]

Bennett discloses that its media client 200 includes "one or more media players" ("***a media player***") to "process and output media to media rendering devices" which include a "speaker and/or display of a mobile terminal 100." SAMSUNG-1041, ¶¶[0002], [0025], [0076], FIGS. 3, 9, 11. As an example, Bennett discloses "media streaming" (a "***media object [that] comprises media data***") where "the user application 150 … receives the media stream and outputs the media stream to a media player" and, in this situation, the "MA 206 … directly

route[s] the media stream to a media player" ("***that is, as a result of the media service manager management of network data transfers for the media object, received by the device and played by the media player through the user interface***"). SAMSUNG-1041, ¶[0076], FIG. 9; SAMSUNG-1003, ¶83. Bennett's FIGS. 3 and 9 depict examples of this process.

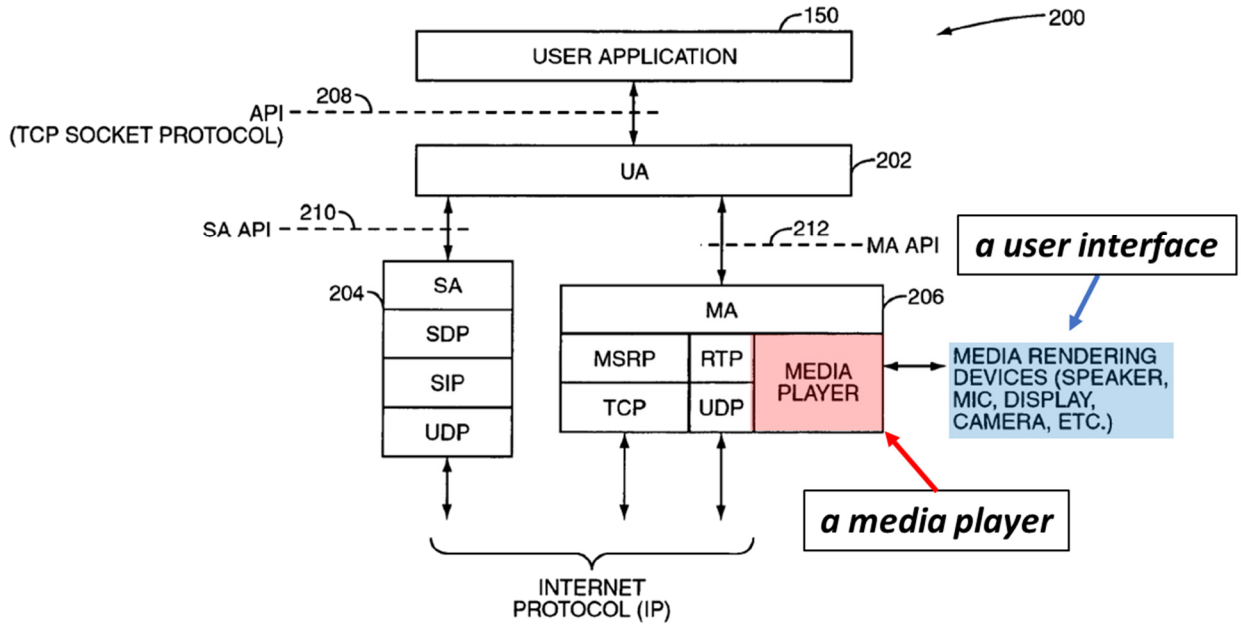


FIG. 3

SAMSUNG-1041, FIG. 3.

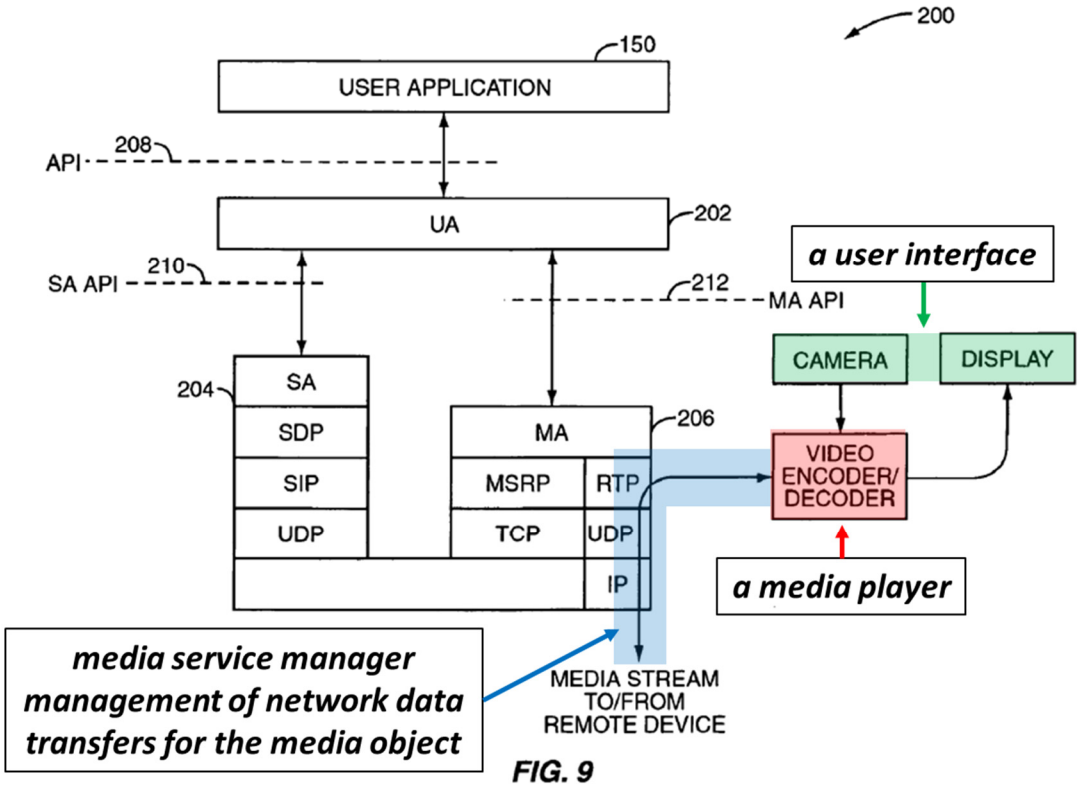


FIG. 9

SAMSUNG-1041, FIG. 9.

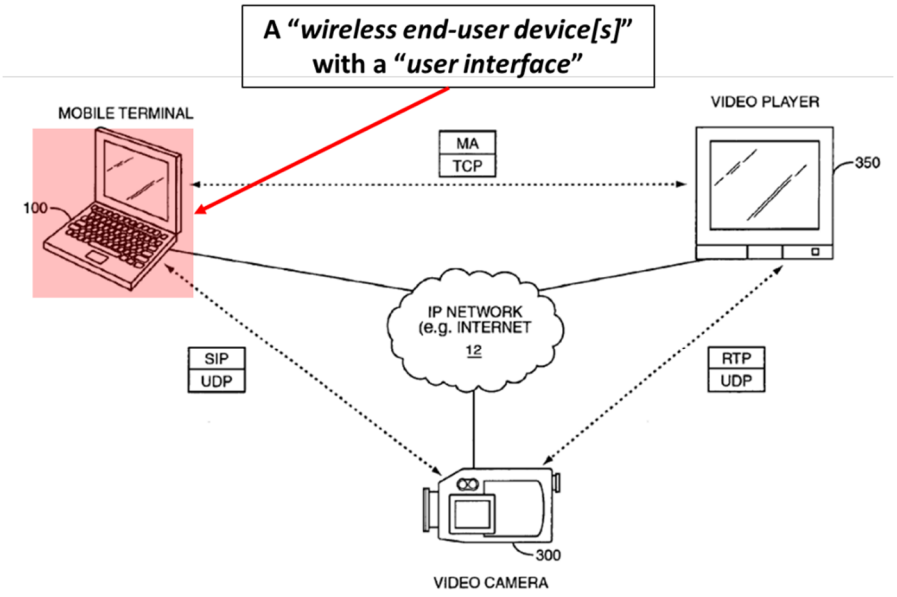


FIG. 11

SAMSUNG-1041, FIG. 11.

[13]

The '918 patent does not define the feature "***traffic flow***," but generally describes that applications generate "***traffic flows***" (e.g., data transmitted and received when performing activities over a network). SAMSUNG-1001, 62:16-20, 81:36-45, 88:47-53, 89:23-25, 93:42-46, 109:55-59, 120:7-10, FIG. 36; SAMSUNG-1003, ¶84.

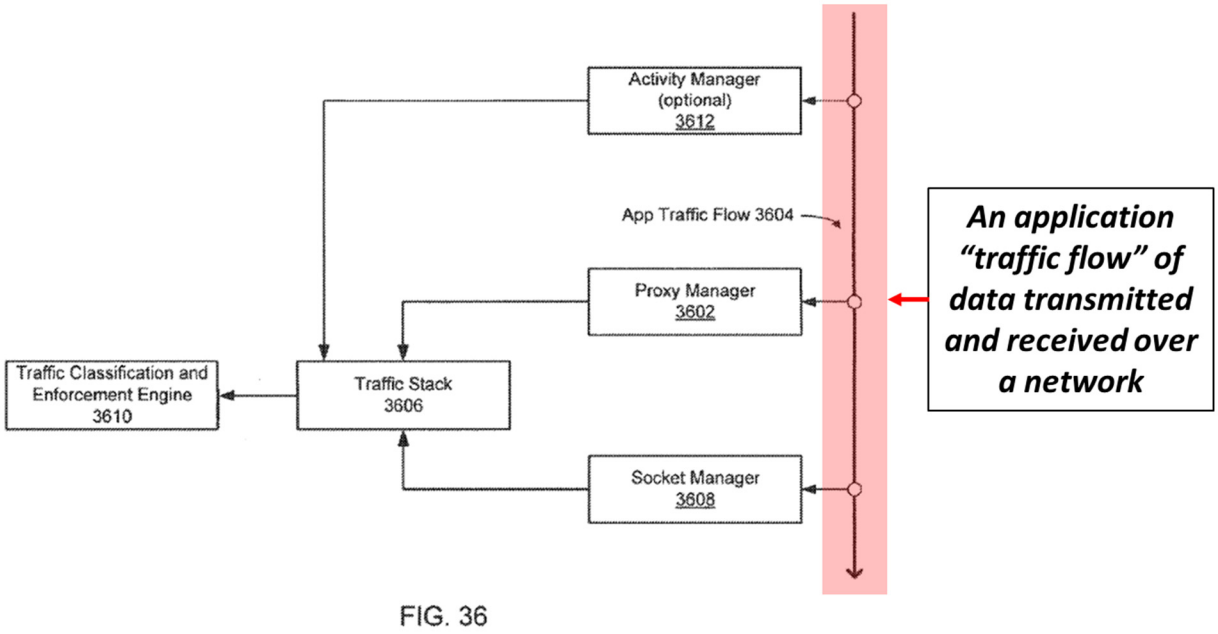


FIG. 36

SAMSUNG-1001, FIG. 36.

The data transmitted and received by the Bennett-Rakoshitz-Rybak device's applications ("***traffic flows***") includes streamed media data ("***one or more traffic flows, comprising the media object network data transfers***"). SAMSUNG-1041, ¶¶[0017]-[0018], [0024], [0070], [0076]; *see supra* [1.4]. Specifically, as described above, Rakoshitz discloses that its network monitoring "tool" ("***one or***

more service classification and measurement agents") "performs inbound and outbound monitoring and control of flows by application" ("***associate one or more traffic flows, comprising the media object network data transfers, with the device application that makes the data transfer request***"). SAMSUNG-1046, 9:18-48, FIG. 2; *see supra* [1.6]. For example, the "FAST" module within Rakoshitz's tool "provides for classification 203 of information such as parameters 213 including application" ("***associate one or more traffic flows, comprising the media object network data transfers, with the device application that makes the data transfer request***"). SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13; SAMSUNG-1003, ¶85.

Additionally, as described above, Rybak's usage control module ("***an enforcement agent***") "acquires the quantity of current period usage of at least one limited wireless resource" for each of a plurality of applications, to include "on-peak cellular voice minutes, megabytes of data or quantity of SMS messages." SAMSUNG-1044, ¶¶[0022]-[0029], [0033], FIGS. 2-3, 7; *see supra* [1.3]; SAMSUNG-1003, ¶86. When an application is about to exceed or will exceed the limit of a "usage limit" ("***an application-based usage control***"), Rybak's usage control module "[restricts] the subscriber's access to wireless services." SAMSUNG-1044, ¶¶[0037]-[0039]. This restriction includes, for example, "a reduced data

transfer rate, or some limit as to the number of cellular voice minutes or SMS messages available per day or per hour" ("***enforce an application-based usage control on network data usage by one or more of the device applications***"). *Id.*

Claim 14

Claim 14 is rendered obvious for similar reasons as discussed in the analysis for the corresponding claim limitations listed in the table below. SAMSUNG-1003, ¶87.

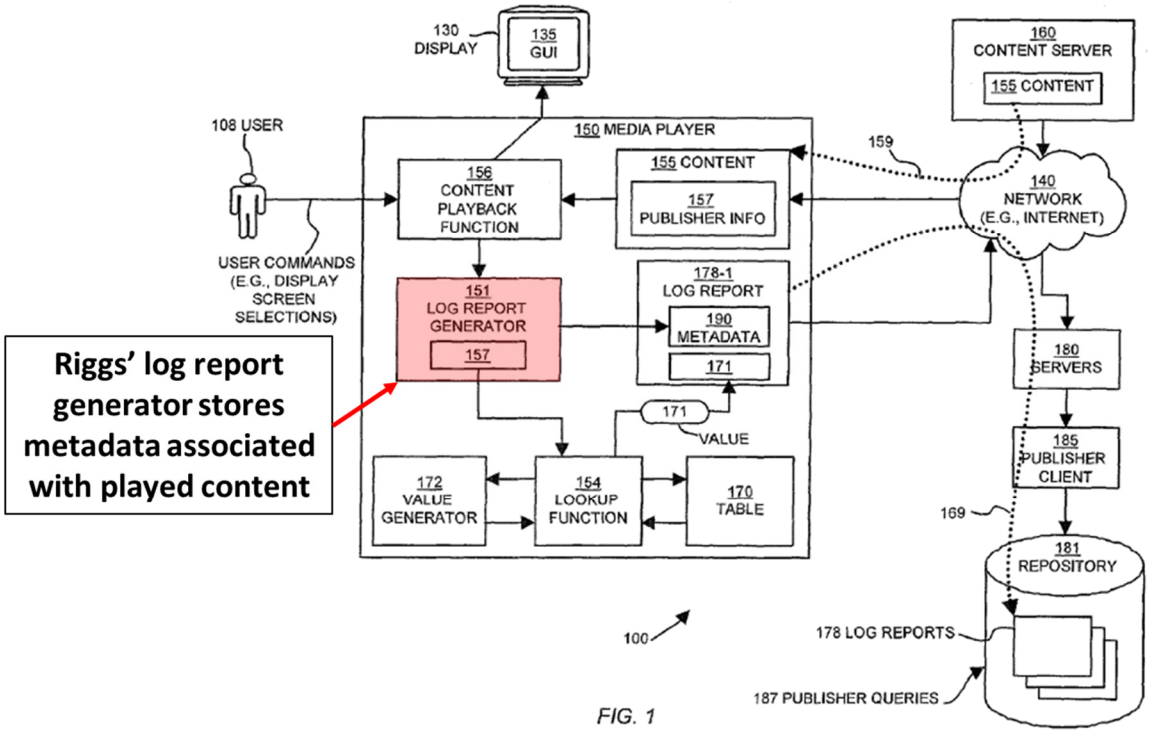
Claim	Corresponding Claim
14.pre	1.pre-1.1
14.1	1.2-1.3
14.2	1.4
14.3	1.5
14.4	1.6

B. [GROUND 1B] – Bennett, Rakoshitz, Rybak, and Riggs render claims 2-6, 8, 11, 15-17, and 19 obvious

1. Overview of Riggs

Riggs discloses a "media player" with an integral "log report generator" that generates a "log report" of "metadata" associated with media. SAMSUNG-1043, 5:20-6:45, FIG. 1. Riggs' metadata includes "application name," "URL," "pub-

lisher information," and other information particular to a content source or publisher. SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; SAMSUNG-1003, ¶40.



SAMSUNG-1043, FIG. 1.

2. The combination of Bennett-Rakoshitz-Rybak and Riggs

It would have been obvious for a POSITA to incorporate Riggs's techniques of logging metadata associated with media—to include Riggs' log generators and log reports—into the Bennett-Rakoshitz-Rybak device to log metadata associated with the media played by applications. SAMSUNG-1043, 1:58-2:5, 6:32-45,

10:13-23, 11:18-31, 16:28-33, FIG. 2. Riggs' log reports would have also provided a convenient way to track and display per application data usage determined by Rakoshitz's tool. SAMSUNG-1041, ¶¶[0002], [0025], [0076], FIGS. 3, 9, 11; SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13. Dr. Traynor notes that a POSITA would have been motivated to make this combination for multiple reasons, including: (1) increased insight into a user's data usage patterns, (2) convenient tracking and sharing of usage data, and (3) increased granularity of data usage tracking on a per-media player basis. SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13; SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 11:54-13:46, 16:28-33, FIG. 2; SAMSUNG-1003, ¶41.

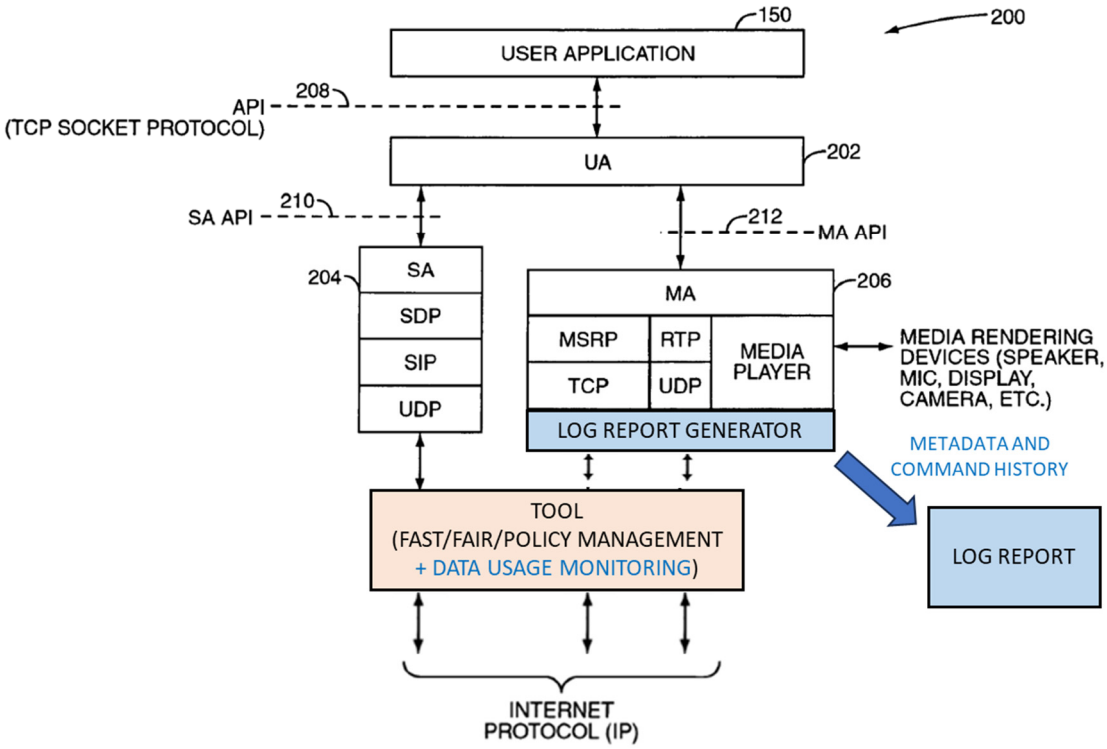
Specifically, Riggs discloses that, by "record[ing] events such as occurrence of playback commands and related playback information," a publisher can "identify corresponding portions of such content that are most appealing to a viewer." SAMSUNG-1043, 1:49-57; 14:27-36. Incorporating Riggs' techniques of logging metadata associated with played content would have enhanced the ability of third-party publishers to recommend relevant media to the user of the Bennett-Rakoshitz-Rybak device (e.g., a song from a music streaming service, or a video from a movie streaming service). SAMSUNG-1041, ¶¶[0024], [0076]; SAMSUNG-1043, 1:49-57, 14:27-36; SAMSUNG-1003, ¶42. Additionally, Riggs discloses that, with user consent, this information can be shared between publishers, allowing

many such streaming services to gain insight into a user's preferences without the need for a publisher to collect this data organically. SAMSUNG-1043, 1:49-57, 2:35-40, 14:27-36.

Riggs also teaches that a specific media player may be relevant to streamed media, and to that end, data specifying the type of media player that viewed the media can be collected. SAMSUNG-1043, 11:54-14:26, FIG. 3. This is particularly relevant to Bennett, which discloses that "one or more media players" can be included on any given device. SAMSUNG-1041, ¶[0025]. Riggs' techniques allow for the collection of data from multiple media players to be standardized such that this data can be easily correlated and analyzed. SAMSUNG-1043, 11:54-14:26, FIG. 3; SAMSUNG-1003, ¶43.

Incorporating Riggs' techniques into the Bennett-Rakoshitz-Rybak device would have been nothing more than the application of known techniques (e.g., logging metadata according to Riggs) to a known structure (e.g., Bennett-Rakoshitz-Rybak's device) to yield predictable results (e.g., the logging of metadata associated with media played by the Bennett-Rakoshitz-Rybak device's media players). *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007). As Dr. Traynor explains, a POSITA would have expected success in implementing this combination because logging metadata associated with media played by the Bennett-Rakoshitz-Rybak media players using Riggs' techniques simply applies Riggs' teachings—with little

modification—to a device that Riggs explicitly discloses can implement its techniques (e.g., a media player). SAMSUNG-1003, ¶44. Indeed, the modification would have involved routine programming ability that would have been well within the skill of a POSITA. *Id.*



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

3. Analysis

[2]

As described above, Rakoshitz discloses that its network monitoring tool "performs inbound and outbound monitoring and control of flows by application" ("***associate wireless network data usage for the media object network data transfers with the device application that makes the data transfer request for***

the media object"). SAMSUNG-1046, 9:18-48, FIG. 2; *see supra* §III.A.6.[1.6]. For example, the "FAST" module within Rakoshitz's tool "provides for classification 203 of information such as parameters 213 including application" ("***associate wireless network data usage for the media object network data transfers with the device application that makes the data transfer request for the media object***"). SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13; SAMSUNG-1003, ¶88.

Additionally, Riggs discloses that its "log reports" include an "***application name***" (also an "***application identifier***") and a "feed uniform resource locator" ("***a process identifier for the application that makes the data transfer request***"). SAMSUNG-1043, 10:13-35, FIG. 2. As described above, Riggs' log reports track and display per application data usage determined by Rakoshitz's tool, such that the combination "***identif[ies] at least one of an application name, an application identifier, or a process identifier***" for each "***application that makes [a] data transfer request***." SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13; *see supra* §III.B.2; SAMSUNG-1003, ¶89.

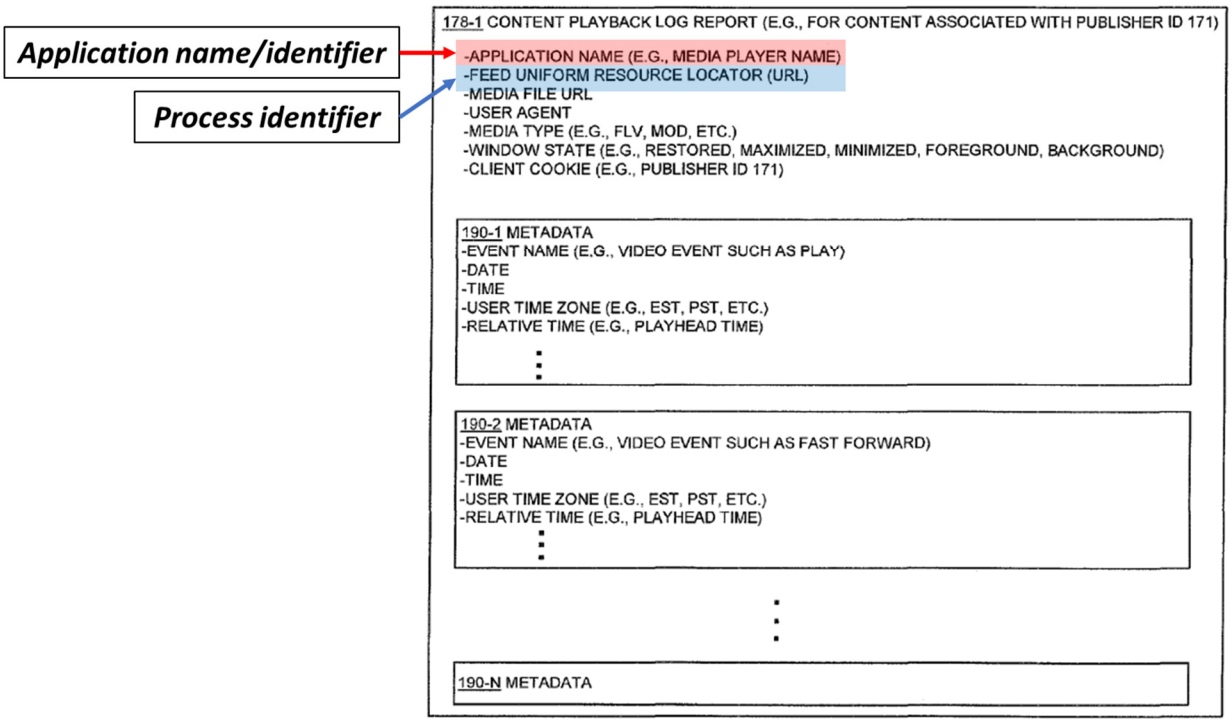


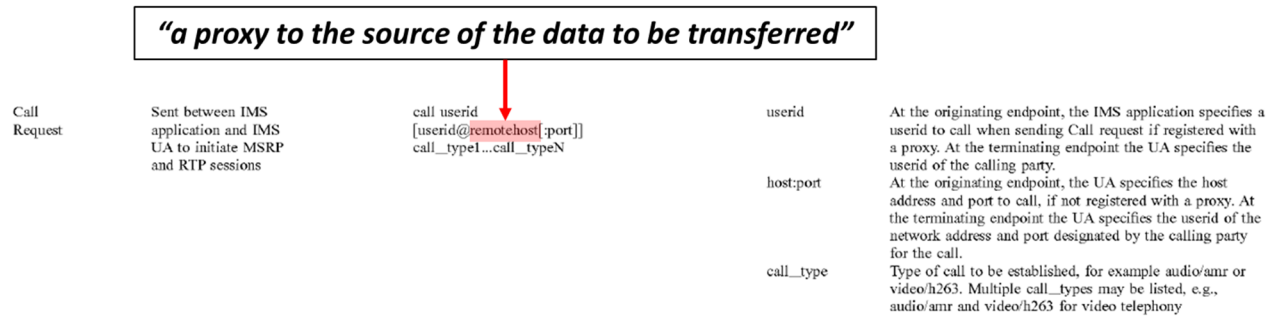
FIG. 2

SAMSUNG-1043, FIG. 2.

[3]

As discussed above, Bennett's "requests" ("***the data transfer request***") include "a network address of a remote host from which media connections will be accepted" ("***a network resource identifier that identifies a source of the data to be transferred***") that is provided by the application when it calls the UA 202 (e.g., via a "CALL" request). SAMSUNG-1041, ¶¶[0034], [0050]-[0056], Table-3; *see supra* §III.A.6.[1.4]; SAMSUNG-1003, ¶90. Additionally, the CALL request includes a "host address and port to call" ("@remotehost"—"***a proxy to the source of the data to be transferred***") when the recipient has not previously registered with the proxy. SAMSUNG-1041, ¶¶[0034], [0084],

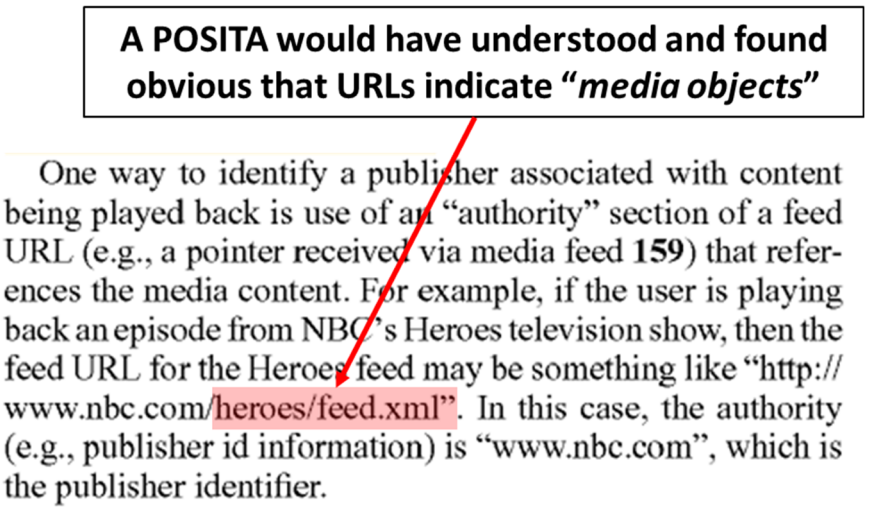
Table-1.



SAMSUNG-1041, Table-1.

Bennett's examples of "***network resource identifier[s]***" include: "a userID, alias, or fully qualified network address" ("***a remote file name/address***"). SAMSUNG-1041, ¶[0034]. Bennett also provides example addresses of "call alice@ims.net: 5060 video/h263" and "call 10.0.0.1:5060 video/h263" ("***a remote file name/address***"). *Id*. Bennett further describes content located at Uniform Resource Identifiers ("URIs"), which a POSITA would have recognized include "***Uniform Resource Locator[s]***" ("URLs"). SAMSUNG-1041, Table-1; SAMSUNG-1003, ¶91; *see supra* §III.A.6.[1.4]. Further, as Dr. Traynor explains, a POSITA also would have recognized and found obvious that URLs also indicated "***the media object to be transferred, in particular***" as the file name of the media object would typically comprise part of the URL. SAMSUNG-1003, ¶91. For example, Riggs discloses that "the global address of content" ("***the media object to be transferred, in particular***") is "typically" provided "in the

form of a Uniform Resource Locator (URL)" (e.g., a "feed URL"). SAMSUNG-1043, 1:25-35, 5:54-62, 6:38-43.



SAMSUNG-1043, 5:54-62.

[4]

Riggs discloses a "media player" with a "log report generator" that generates a "log report" of "playback commands" and "metadata" associated with played media ("***store an entry comprising the at least one of the application name, the application identifier, or the process identifier for each of the device applications that makes a data transfer request***"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; *see supra*, [2]. Examples of Riggs "metadata" include an "[a]pplication [n]ame" ("***application name***") and "media feed URL" ("***process identifier***"). *Id*. Riggs' metadata also includes "a URL associated with the content being played back" ("***each stored entry further comprising information about the corresponding network resource identifier for***

the data transfer request"). SAMSUNG-1043, 6:32-45, 10:13-23, 11:18-31, 16:28-33; SAMSUNG-1003, ¶92.

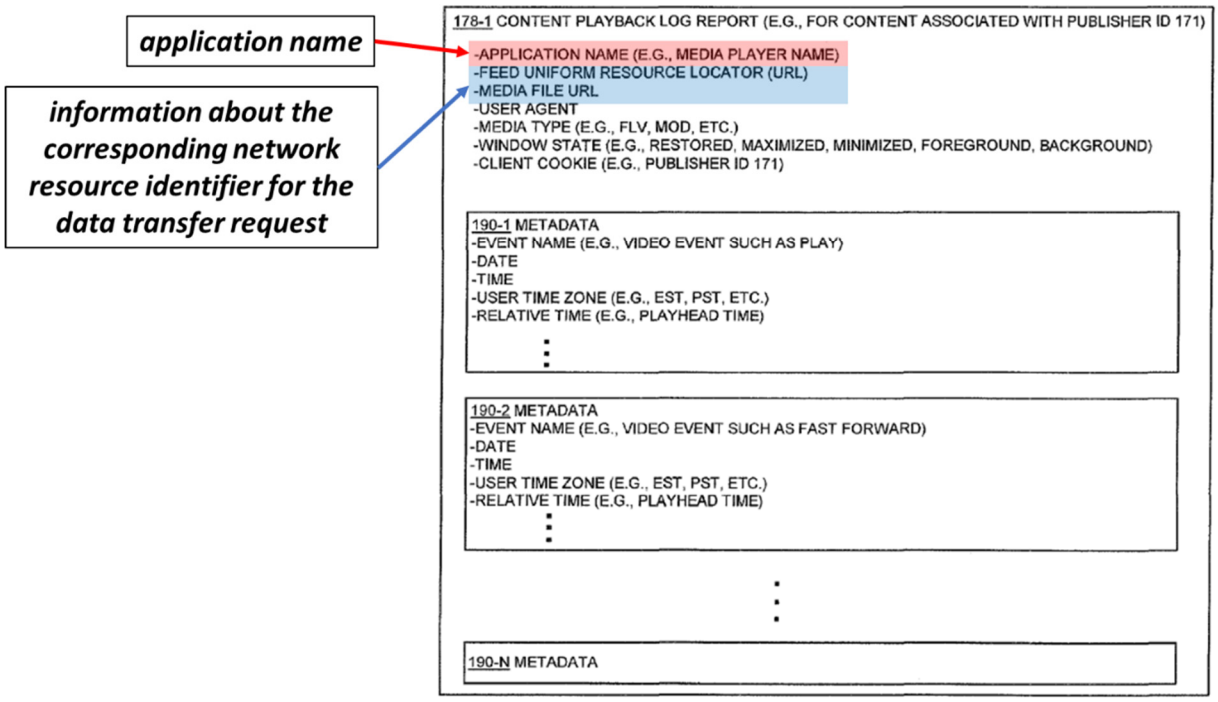
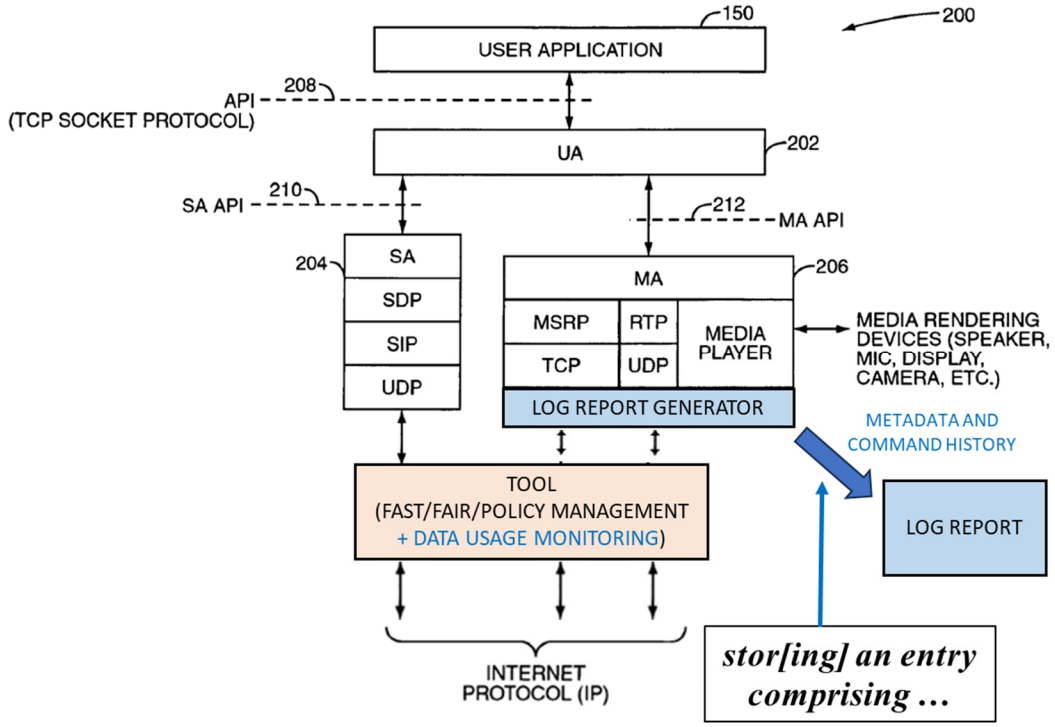


FIG. 2

SAMSUNG-1043, FIG. 2.

As described above, in the combination, when monitoring data usage for each of the applications, the Bennett-Rakoshitz-Rybak-Riggs device would have additionally logged "playback commands" and "metadata" describing the retrieved media objects in a "log report," as described in Riggs ("***to associate wireless network data usage for the media object network data transfers with the device application that makes the data transfer request for the media object further comprises to store an entry comprising …***"). *See supra*, §III.B.2. Doing so

would have provided the benefits described above, including gaining increased insight into a user's data usage patterns. *See supra*, §III.B.2; SAMSUNG-1003, ¶93.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

[5]

As described above, Riggs discloses a "log report generator" ("***a requesting application storing function***") within the "media player" ("***within the media services manager***") that generates a log report of metadata associated with played content. SAMSUNG-1043, 5:23-32, 6:32-45, 11:45-49, FIG. 1; SAMSUNG-1001, 112:53-61, 114:27-34 (describing the "requesting-application storing function"); *see supra* [4] (describing "log reports"); SAMSUNG-1003, ¶94.

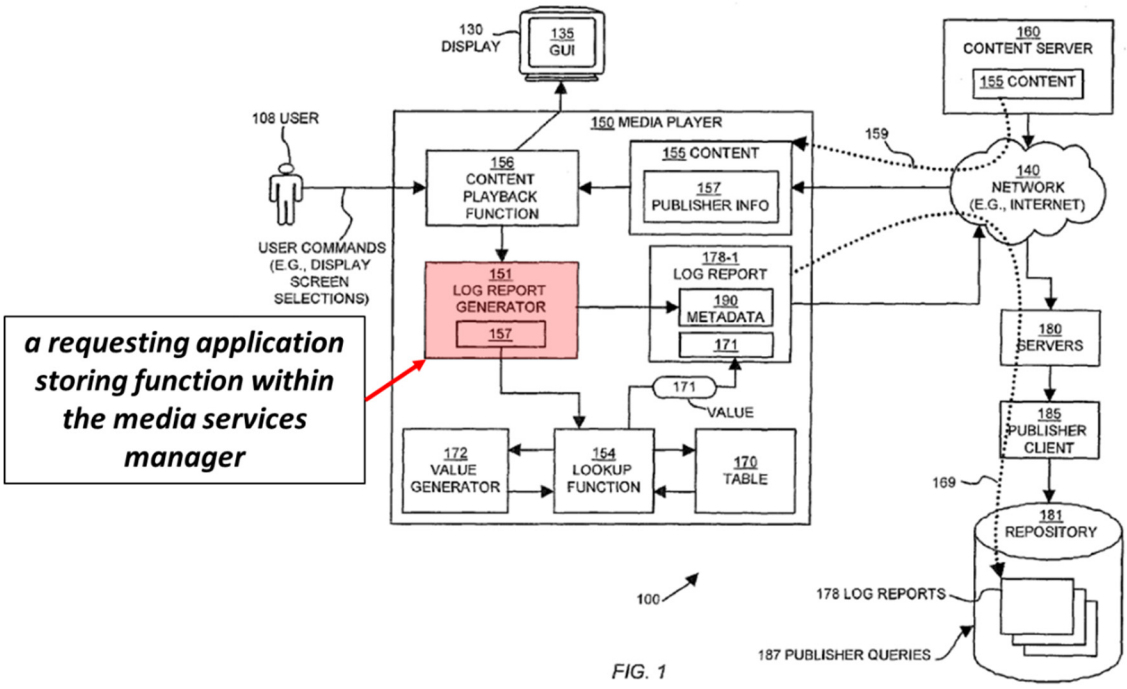
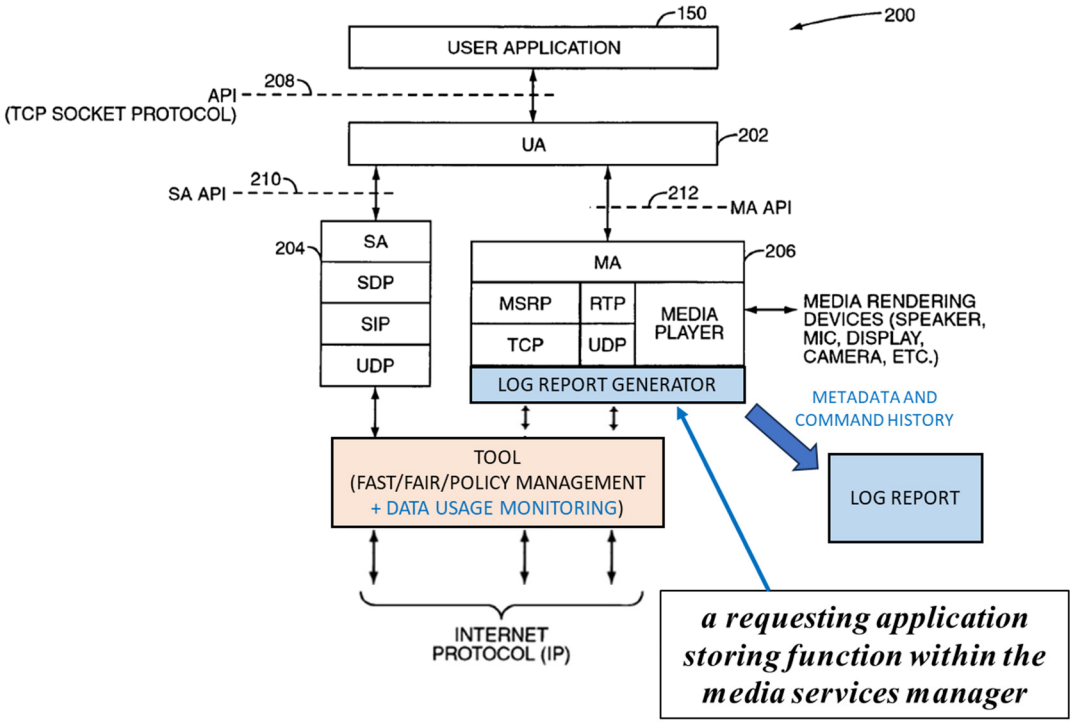


FIG. 1

SAMSUNG-1043, FIG. 1.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

[6]

Riggs discloses that its techniques can be implemented on multiple media players "350-1" and "350-2" ("***a first media service manager [and] … a second media service manager of a different type than the first media service manager***") that each include "log reports" from a respective "log report generator" ("***a first requesting application storing function [and] … a second requesting application storing function within the second media service manager***"). SAMSUNG-1043, 11:54-13:46; SAMSUNG-1003, ¶95. Additionally, Riggs demonstrates that these two media players are "***of a different type***," at least because each of media players 350-1 and 350-2 generate log reports using different "unique values." *Id*.

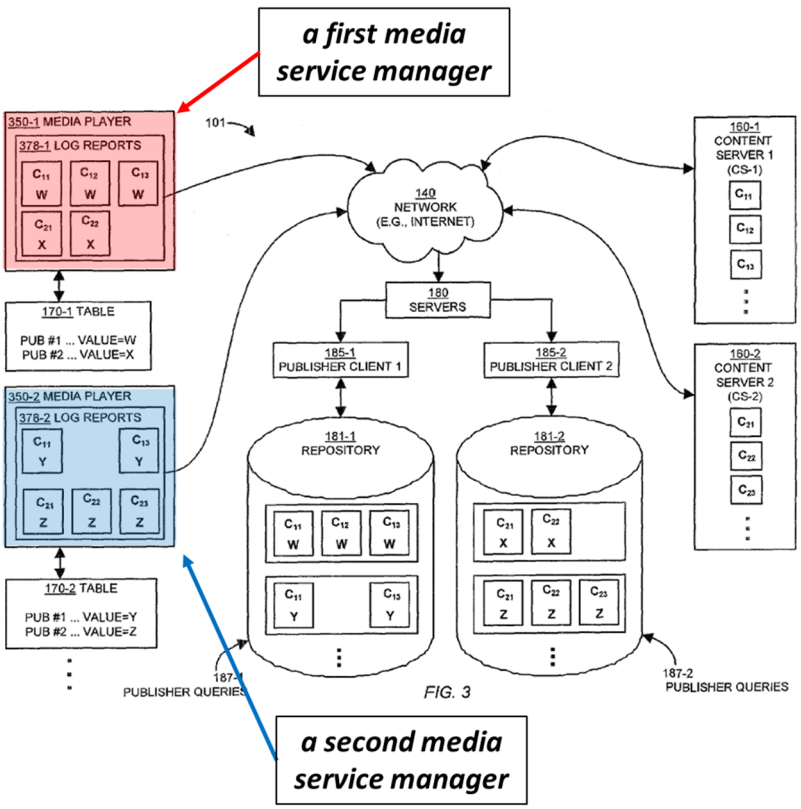
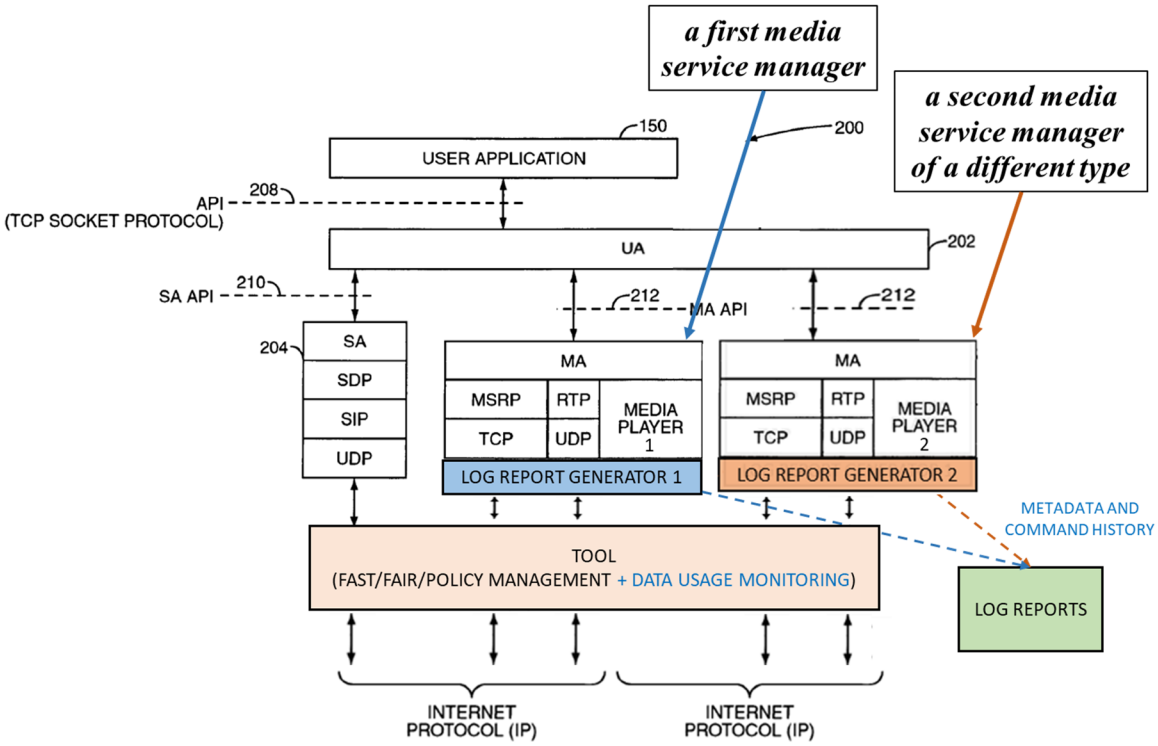


FIG. 3

SAMSUNG-1043, FIG. 3.



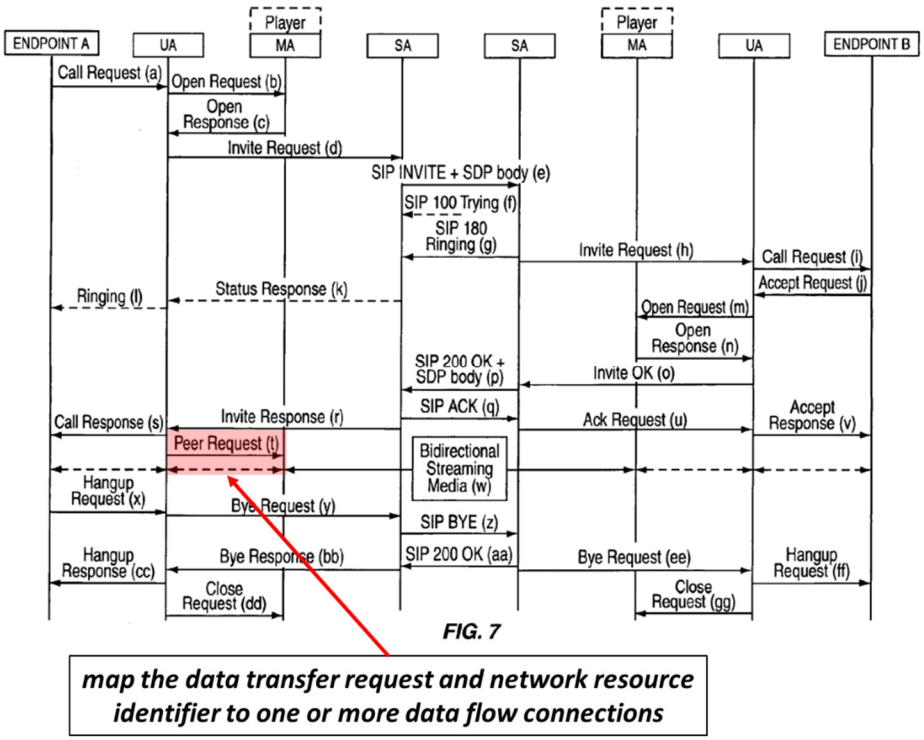
SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

Although Riggs does not explicitly disclose that media players 350-1 and 350-2 are operating on the same device, Riggs does not otherwise exclude or disparage this arrangement. *See generally*, SAMSUNG-1043. Additionally, Bennett describes that its media client includes "one or more media players," and as Dr. Traynor explains, a POSITA would have understood and found obvious that the Bennett-Rakoshitz-Rybak-Riggs device would have included multiple media players, at least because Riggs describes that media players can be embodied in "browsers" (a plurality of which can operate on the same device simultaneously).

SAMSUNG-1041, ¶[0025]; SAMSUNG-1043, 1:13-24, 1:58-62, 5:33-38; SAMSUNG-1003, ¶96; *see In re Harza*, 274 F.2d 669, 671 (CCPA 1960) (holding that mere duplication of parts absent some unexpected result carries no patentable significance). Further, the use of two or more media agents in the Bennett device would have enabled simultaneous transmission and reception of media over different protocols, for example, "MSRP" and "RTP" (e.g., MSRP text communications during an active RTP stream). SAMSUNG-1041, ¶¶[0053]-[0054], [0066], [0072].

[8]

Bennett discloses that, once the SA 204 establishes a communication session (e.g., an "RTP session"—"***one or more data flow connections communicated through the device network stack***"), the UA 202 "sends a PEER request to the MA206 to provide the MA206 with the host address and port opened for the RTP session" ("***map the data transfer request and network resource identifier to one or more data flow connections communicated through the device network stack***"). SAMSUNG-1041, ¶¶[0055], [0073], [0079], FIG. 7; SAMSUNG-1003, ¶97. The PEER request includes "the network address and port for the media connection" (the "***network resource identifier***" associated with the "***one or more data flow connections communicated through the device network stack***"). *Id*.

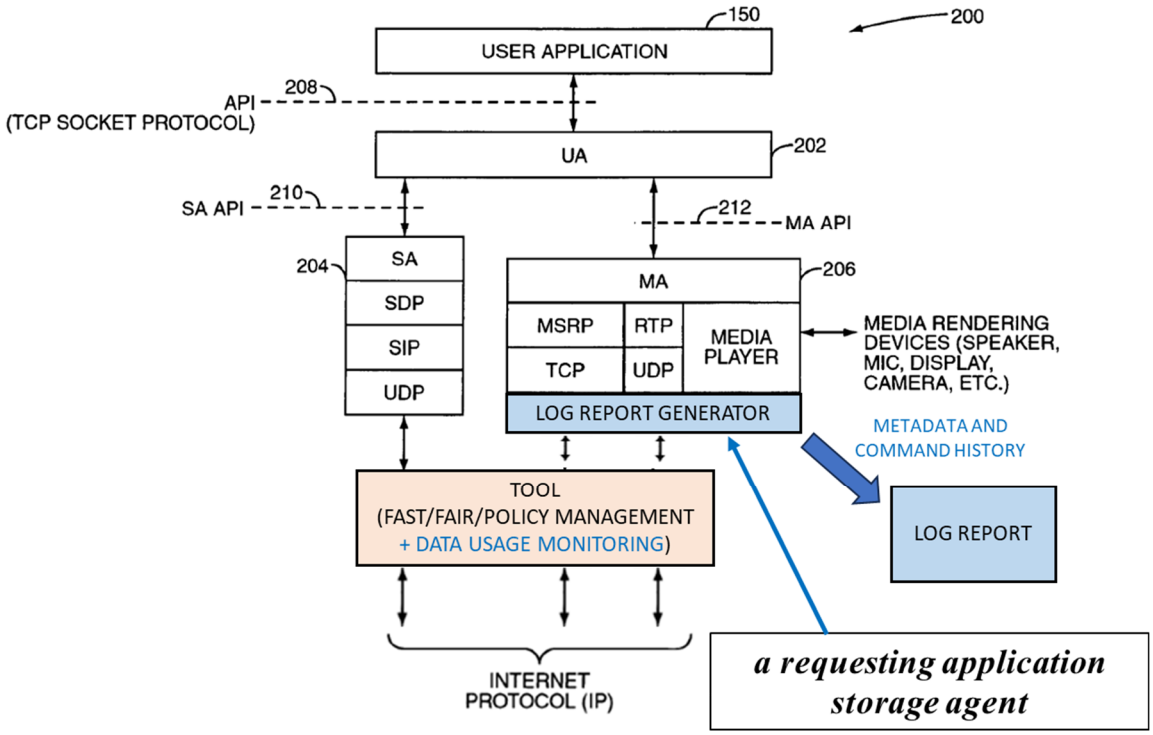


SAMSUNG-1041, FIG. 7.

[11.1]

See supra, [4], [5]. As described above, Riggs's "log report generator" ("***a requesting application storing agent***") generates a "log report" of metadata associated with played content ("***store application identification information and network resource identification information***"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2. In the combination, metadata and data usage data is stored for "***each device application that makes a data transfer request using the second API***," at least because Rakoshitz and Rybak's techniques of data monitoring are performed for each application. SAMSUNG-1046, 9:39-62, 12:20-33; SAMSUNG-1044, ¶¶[0017]-[0019], [0023]-[0024],

[0044]-[0045], FIG. 2; *see supra*, §III.A.6.[1.3]; SAMSUNG-1003, ¶98.



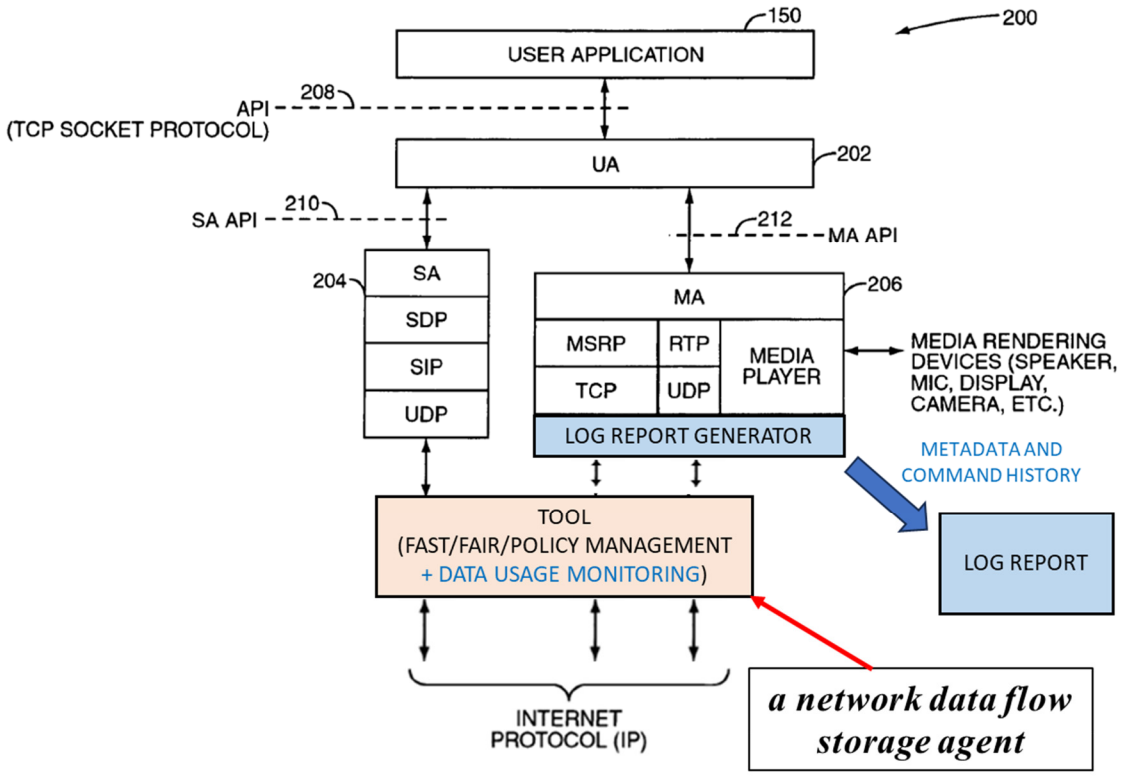
SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

[11.2]

The '918 Patent describes that "network data flow identifiers" include "a data flow tag, an IP address, a TCP-IP identifier, a layer 7 identifier, a socket tuple, etc." SAMSUNG-1001, 113:3-9; SAMSUNG-1003, ¶99.

Rakoshitz discloses that its network monitoring "tool" ("***a network data flow storage agent***") that "performs inbound and outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations" ("***identify network data flow identification information***"). SAMSUNG-1046, 9:18-48, FIG. 2. For example, the

"FAIR" module within Rakoshitz's tool determines "parameters 215 such as class, session, burst, [and] packet" ("***identify network data flow identification information***") to "implement[] traffic control based on a combination of flow control and queuing algorithms." SAMSUNG-1046, 12:35-50, FIG. 2. Rakoshitz describes that "traffic classes" (determined by the FAIR module) include "IP address, subnet, network, netgroup, or range of source or destination; URL of the sender or group of URLs," "[s]ervice," and "file types" ("***network data flow identification information***"). SAMSUNG-1046, 13:11-34. Additionally, Rakoshitz describes that "traffic flows" are analyzed for "each" application that consumes data on the hosting device ("***each network data flow associated with the media service manager***"). SAMSUNG-1046, 5:53-59, 16:1-4; *see supra*, §III.A.6.[1.3]; SAMSUNG-1003, ¶100.

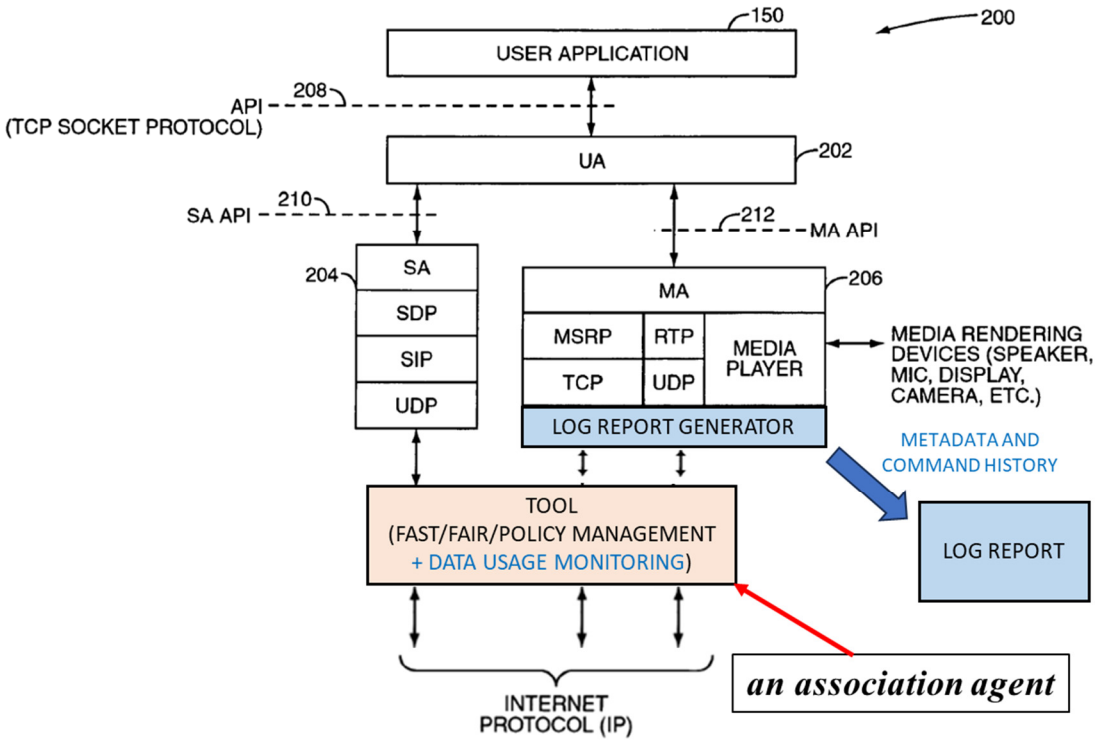


SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

[11.3]

As described above, Rakoshitz discloses that its network monitoring "tool" ("***an association agent***") that "performs inbound and outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations." SAMSUNG-1046, 9:18-48, FIG. 2. In particular, the "FAST" module within Rakoshitz's tool "provides for classification 203 of information such as parameters 213 including application" and "measurement 219 of various parameters" ("***match the network data flow identification information***"). SAMSUNG-1046, 12:20-33, FIG. 2. A POSITA

would have recognized and found obvious that Rakoshitz's tool and FAST module would have "***match[ed] the network data flow identification information for a network data flow***" to "***application identification information associated with [that] network data flow***," at least because Rakoshitz's tool is already capable of distinguishing per-application usage (the FAST module's "classification 203" by "application") and because this matching would have been needed to produce useful data usage patterns for each application. SAMSUNG-1046, 12:20-33, 20:15-30, FIG. 2, FIG. 13 (depicting an example graph of "bandwidth consumption" for different "services"); SAMSUNG-1044, ¶¶[0022]-[0029], [0033], FIGS. 2-3, 7; *see supra*, §III.A.6.[1.6]; SAMSUNG-1003, ¶101.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, and Riggs).

Claims 15-17

The below claims are rendered obvious for similar reasons as discussed in the analysis for the corresponding claim listed in the table below. SAMSUNG-1003, ¶102.

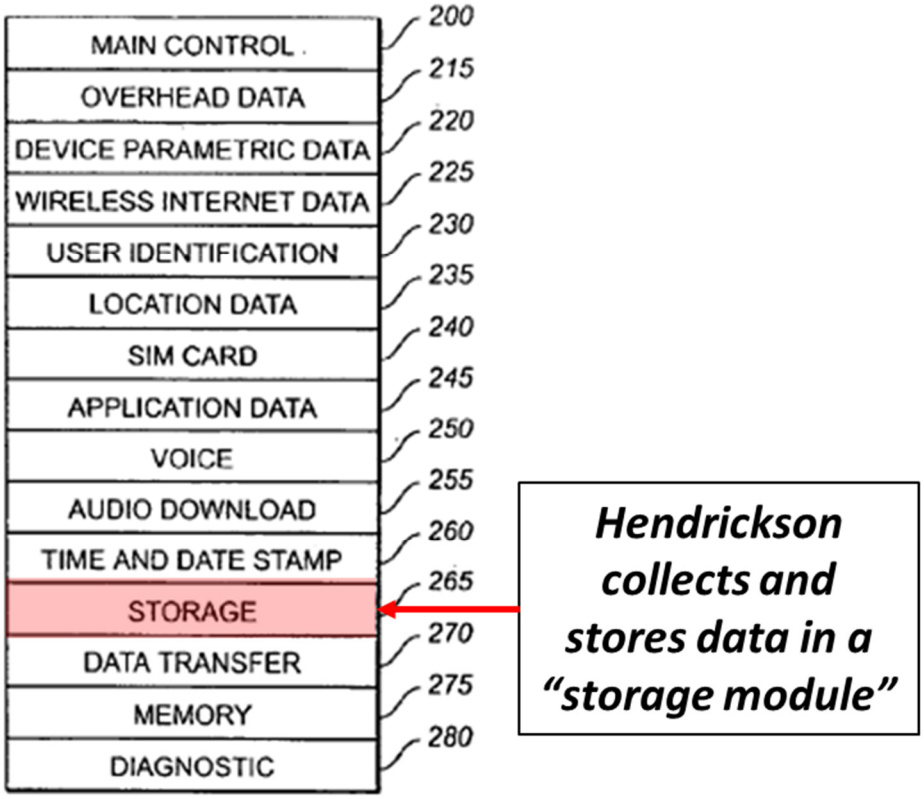
Claim	Corresponding Claim
15.pre	1.pre
15.1	1.1
15.2	1.2
15.3	1.3
15.4	1.4, 3
15.5	1.5
15.6	1.6, 2, 4
16	5
17	6
19.pre	1.pre
19.1	1.1
19.2	1.2
19.3	1.3
19.4	1.4, 3
19.5	1.5, 8
19.6	1.6, 2

C. [GROUND 1C] – Bennett, Rakoshitz, Rybak, Riggs, and Hendrickson render claims 7, 12, and 18 obvious

1. Overview of Hendrickson

Hendrickson discloses a system for measuring "wireless device and wireless network usage and performance metrics" which collects "device parametric data" and "transmit[s] the collected data via a wireless communication network to one or more control centers for processing." SAMSUNG-1054, 4:37-5:38, 7:25-8:6, FIGS. 1-2. Hendrickson collects and stores its data into a local "storage module 265" prior to transmission to the control center because, as Hendrickson notes, there may be "no network connection available to transmit" or "immediate transfer of data [may] result in a poor user experience." SAMSUNG-1054, 12:29-42; SAMSUNG-1003, ¶45.

FIG. 2



SAMSUNG-1054, FIG. 2.

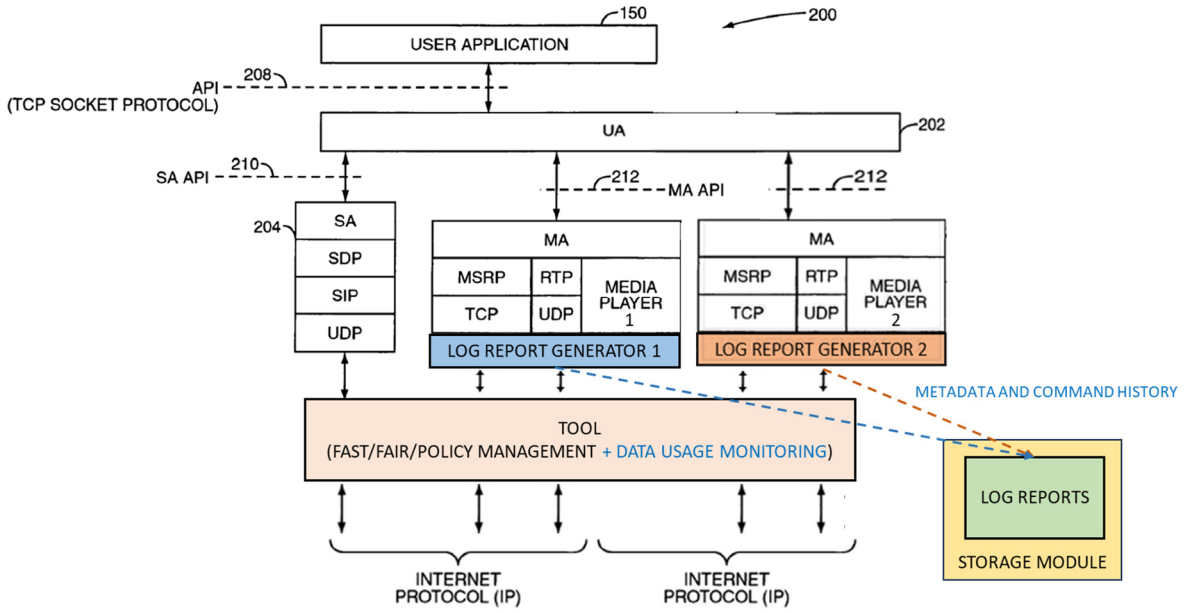
2. The combination of Bennett-Rakoshitz-Rybak-Riggs and Hendrickson

It would have been obvious for a POSITA to incorporate Hendrickson's techniques of storing data associated with played media content (e.g., using a storage module) into the Bennett-Rakoshitz-Rybak-Riggs device to store log reports generated by Bennett-Rakoshitz-Rybak-Riggs' log report generators. SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; SAMSUNG-1054, 12:29-42; *see supra* §§III.B.3.[4]-[6]. As Dr. Traynor explains, a POSITA would have recognized and found obvious that generated log reports would have needed

to have been stored locally on the device at least temporarily, at least to preserve the data across device operating cycles in the absence of a network connection. SAMSUNG-1054, 12:29-42 (noting that storing data is prudent when "there is no network connection available to transmit" or "immediate transfer of data would result in a poor user experience"); *see supra* §§III.B.3.[4]-[6]; SAMSUNG-1003, ¶46.

Incorporating Hendrickson's techniques into the Bennett-Rakoshitz-Rybak-Riggs device would have been nothing more than the application of known techniques (e.g., storing data in the form of log reports) to a known structure (e.g., Bennett-Rakoshitz-Rybak-Riggs' device) to yield predictable results (e.g., the storing of log reports associated with media played by the Bennett-Rakoshitz-Rybak-Riggs device). *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007). As Dr. Traynor explains, a POSITA would have expected success in implementing this combination because the storing of Bennett-Rakoshitz-Rybak-Riggs' log reports using Hendrickson's techniques simply applies Hendrickson's teachings—with little modification—to a device that performs the same functions that Hendrickson envisions within its own disclosure (e.g., a system that logs metadata associated with content played by a media player). SAMSUNG-1003, ¶47. Indeed, the modification would have (1) involved routine programming ability that would have been well within the skill of a POSITA, and (2) leveraged the existing infrastructure of the

base references in a way that was already well known in the art (e.g., using the device memory that Bennett, Rakoshitz, Rybak, and Riggs all individually disclose and render obvious). SAMSUNG-1041, ¶[0029] ("[t]he host device includes memory in which to store code implementing the present invention"); SAMSUNG-1046, 2:66-3:3; SAMSUNG-1044, ¶¶[0028]-[0029]; SAMSUNG-1043, 14:37-15:2, FIG. 4; SAMSUNG-1003, ¶47.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, Riggs, and Hendrickson).

3. Analysis

[7]

The '918 patent does not define a "***usage and classification database***" but rather describes that "the results of the service usage classification or accounting can be stored in a local device (or operating system) database" and that the stored

information "can be provided to other applications, operating system service functions, other device software functions, or network-based service classification or accounting functions." SAMSUNG-1001, 113:46-55; SAMSUNG-1003, ¶103.

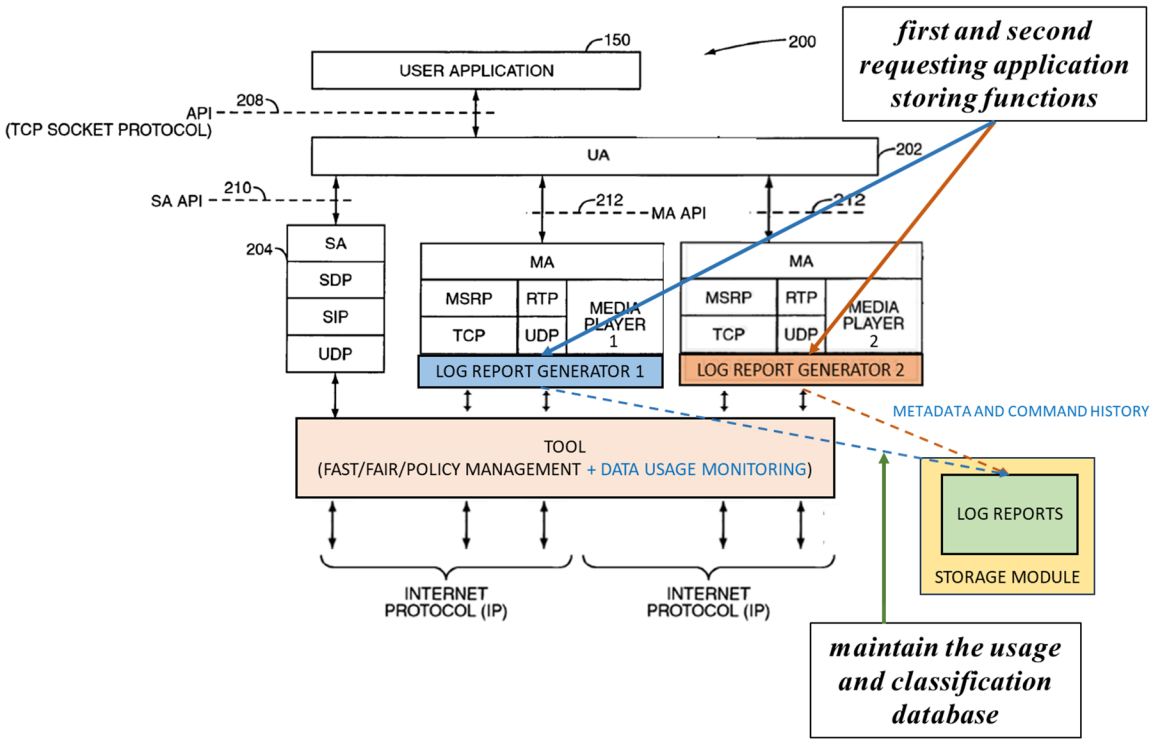
As described above, Riggs' "log report generators" ("***one or more service classification and measurement agents***" and the "***first and second requesting application storing functions***") generate "log reports" of "metadata" associated with content played on a media player ("***application association information***"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; *see supra* §§III.B.3.[4]-[6]; SAMSUNG-1003, ¶104. And, as described above, Riggs' log report generators are "***one or more service classification and measurement agents***" and thus "***receive application association information stored by the first and second requesting application storing functions***." *See supra*, §III.B.3.[5].

As Dr. Traynor explains, a POSITA would have recognized and found obvious that the generated log reports would have been stored in a local repository on the device ("***usage and classification database***"), at least because this storage would have been needed to preserve the data across device operating cycles in the absence of a network connection. SAMSUNG-1054, 12:29-42; SAMSUNG-1003, ¶105. Moreover, the Bennet-Rakoshitz-Rybak-Riggs device would have included a means for electronic storage of files, like log reports. SAMSUNG-1041, ¶[0029]

("[t]he host device includes memory in which to store code implementing the present invention"); SAMSUNG-1046, 2:66-3:3; SAMSUNG-1044, ¶¶[0028]-[0029]; SAMSUNG-1043, 14:37-15:2, FIG. 4.

To the extent that a POSITA would not have found it obvious that Rigg's log reports are stored locally on the device prior to transmission, Hendrickson discloses a "storage module 265" ("***usage and classification database***") on a mobile device as part of a system for measuring "usage and performance metrics" for applications operated on the mobile device. SAMSUNG-1054, 6:40-7:11, 12:29-42, FIG. 2; SAMSUNG-1003, ¶106. The storage module 265 is responsible for "collecting information from each data module and encrypting, compressing, and storing the data in log file format in the non-volatile memory locations of the wireless device" and "temporarily stor[ing] data before being handled by the Data Transfer Module" which transmits the collected data (a "***usage and classification database***" that stores data "local[ly]" such that data "can be provided to other applications, operating system service functions, other device software functions, or network-based service classification or accounting functions"). SAMSUNG-1054, 12:29-42; SAMSUNG-1001, 113:46-55. In the combination, the storage module 265 would have stored log reports generated by the Bennett-Rakoshitz-Rybak-Riggs log report generators, prior to these reports being transmitted for external consumption ("***maintain the usage and classification database based in part on***

the received application association information"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; SAMSUNG-1054, 12:29-42 (noting that storing data is prudent when "there is no network connection available to transmit" or "immediate transfer of data would result in a poor user experience"); *see supra* §§III.B.3.[4]-[6], II.C; SAMSUNG-1003, ¶106.



SAMSUNG-1041, FIG. 3 (as modified by Rakoshitz, Rybak, Riggs, and Hendrickson).

[12.1]

As described above, a POSITA implementing the Bennett-Rakoshitz-Rybak-Riggs combination would have recognized and found obvious that Rigg's log reports would have been a convenient way to log data usage determined from Rakoshitz's tool. *See supra*, §III.B.2; SAMSUNG-1003, ¶107. In the combination,

Riggs' log report generators generate log reports which are then stored in Hendrickson's "storage module 265" ("***a local database to store data usage***") which stores a record of metadata and data usage associated with played content for each application ("***data usage for network data transfers managed by the media service manager on behalf of a device application***"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; *see supra* [7]; SAMSUNG-1003, ¶107. Additionally, both Rakoshitz and Riggs disclose that this information is "***classified by device application***" (particularly, using an application name). SAMSUNG-1046, 12:20-33; SAMSUNG-1043, 11:18-31.

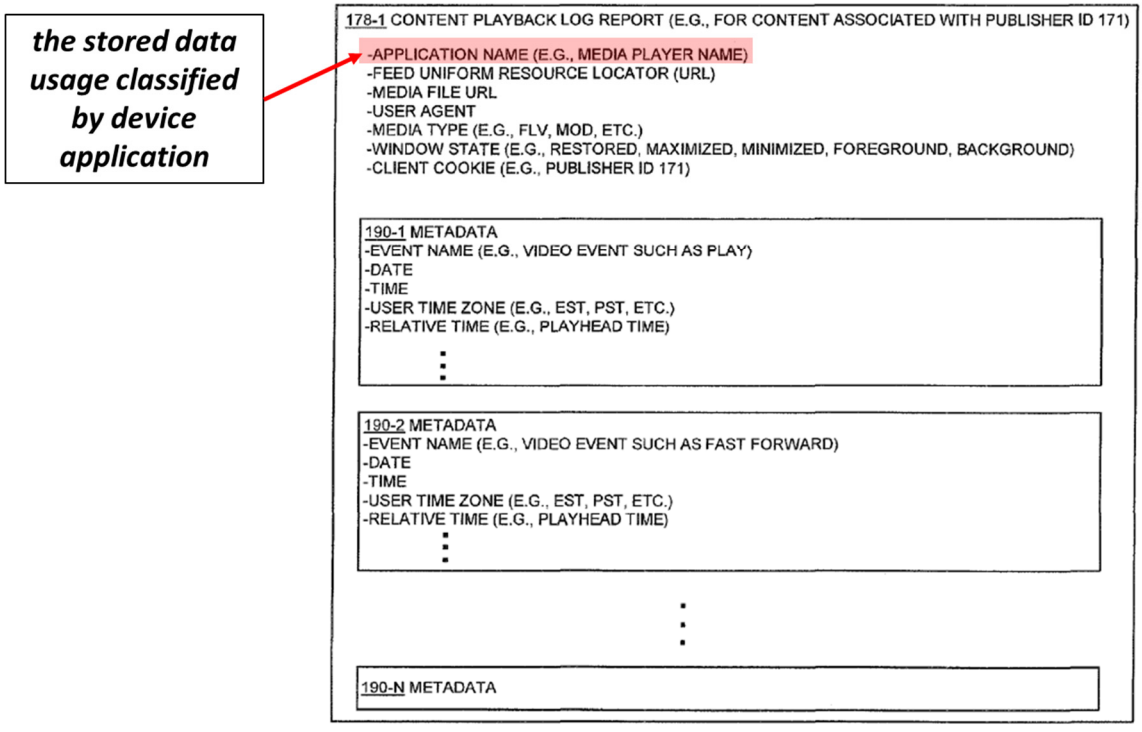


FIG. 2

SAMSUNG-1043, FIG. 2.

[12.2]

See supra, §III.A.6.[9]. SAMSUNG-1003, ¶108.

[12.3]

Rakoshitz discloses "graphical user interface ('GUI') 201" ("***a user interface display agent***") that is "an easy to use interface … for performance monitoring and profiling" ("***display the data usage classified by application to a user***"). SAMSUNG-1046, 9:6-19; 12:3-11, FIGS. 2, 9-13; SAMSUNG-1044, FIG. 7. As described above, Rakoshitz and Rybak's techniques are "***classified by application***," and for this reason a POSTA would have recognized and found it obvious that data usage would have been displayed as such. *See supra*, §III.A.6.[1.6]; SAMSUNG-1003, ¶109.

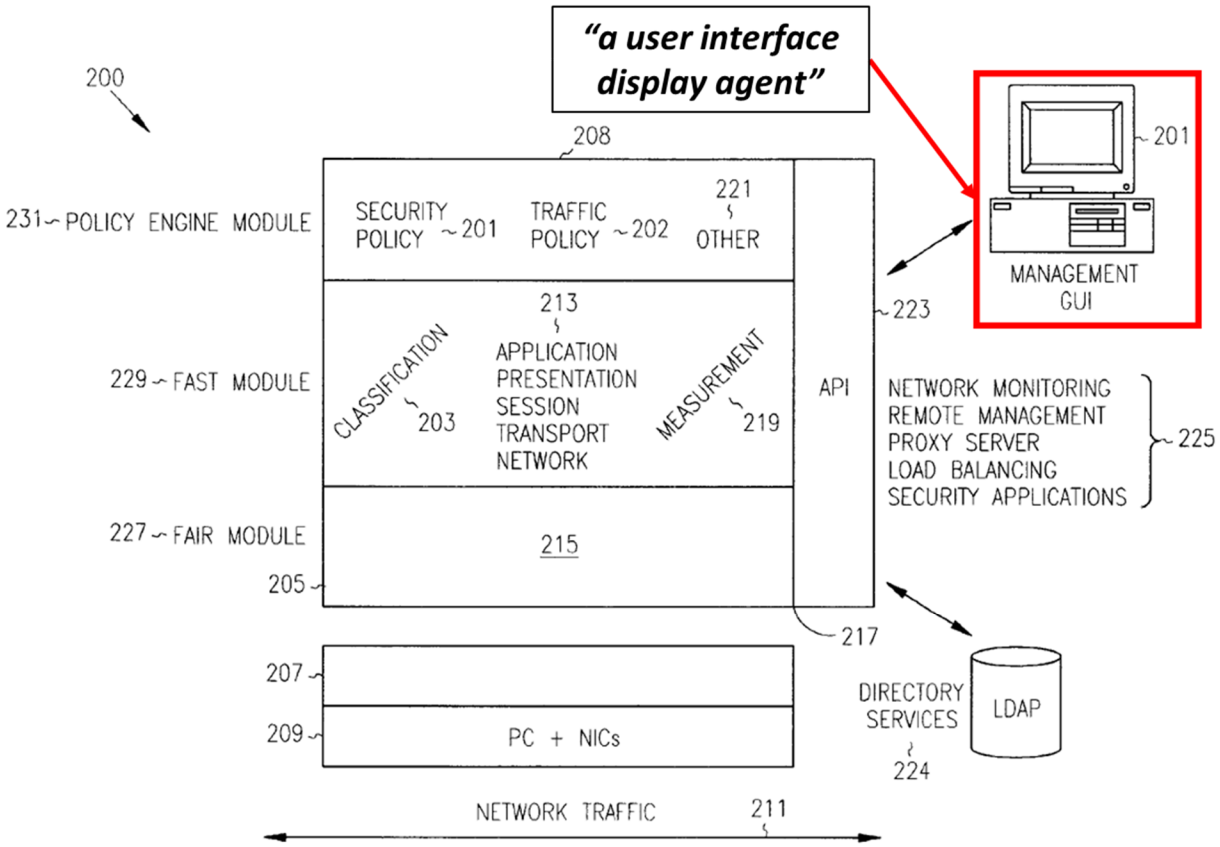


FIG. 2

SAMSUNG-1046, FIG. 2.

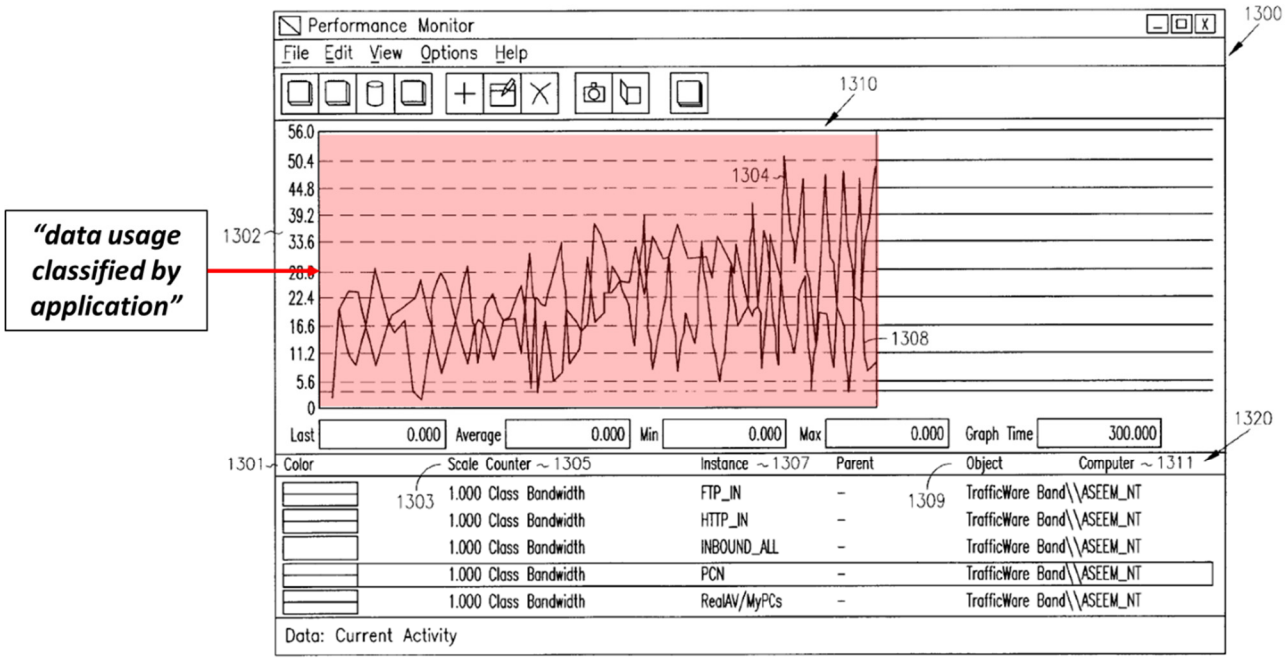


FIG. 13

SAMSUNG-1046, FIG. 13.

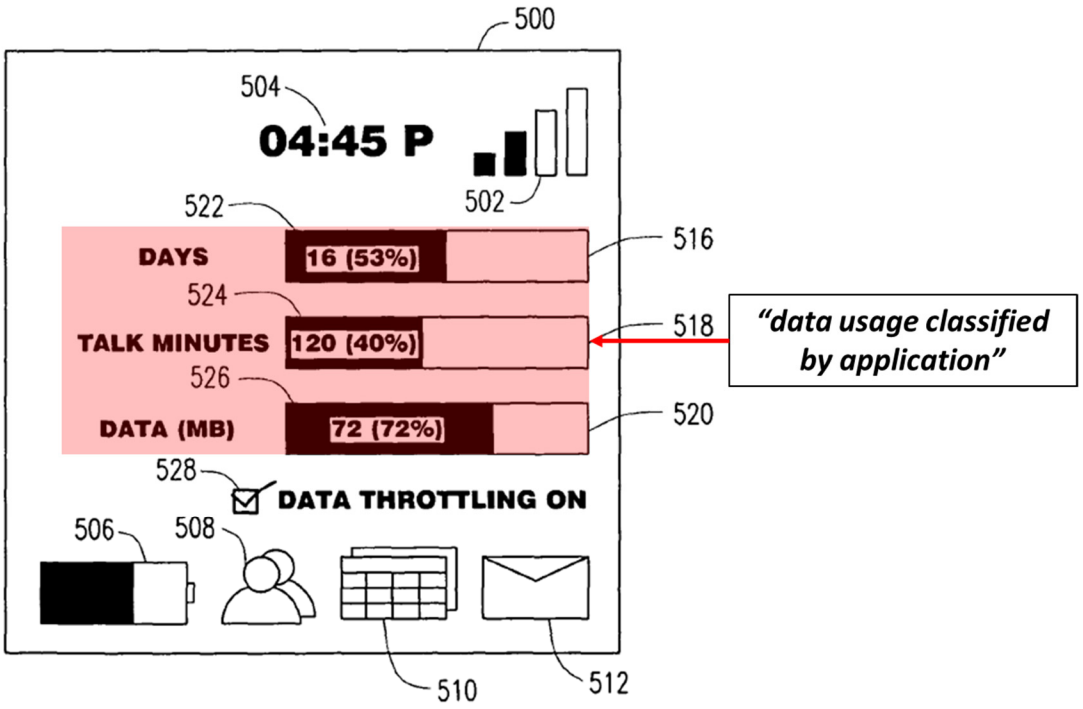


FIG. 7

SAMSUNG-1044, FIG. 7.

[18]

As an initial matter, claim 17 repeats the same features recited in claim 7 above, with the substitution of a "***usage and classification reconciliation agent***" for "***the one or more service classification and measurement agents***." *See supra*, [7]. The '918 patent does not define a "***usage and classification reconciliation agent***," but instead describes a "usage/classification reconciliation engine 3216" that "can track usage of [an] app, classify the app, and to the extent there is disagreement at different system locations, reconcile usage in accordance with rules." SAMSUNG-1001, 117:12-24; SAMSUNG-1003, ¶110.

As described above, Riggs' "log report generators" ("***first and second requesting application storing functions***") generate "log reports" which are then stored in Hendrickson's "storage module 265" ("***a usage and classification database***") which stores a record of "metadata" associated with played content ("***maintain the usage and classification database based in part on the received application association information***"). SAMSUNG-1043, 1:58-2:5, 6:32-45, 10:13-23, 11:18-31, 16:28-33, FIG. 2; *see supra*, [7]; SAMSUNG-1003, ¶111.

Rakoshitz discloses that its network monitoring "tool" ("***a usage and classification reconciliation agent***") "performs inbound and outbound monitoring and control of flows by application, source address, destination address, URL, time of day, day of week, day of month, and other variations." SAMSUNG-1046, 9:18-

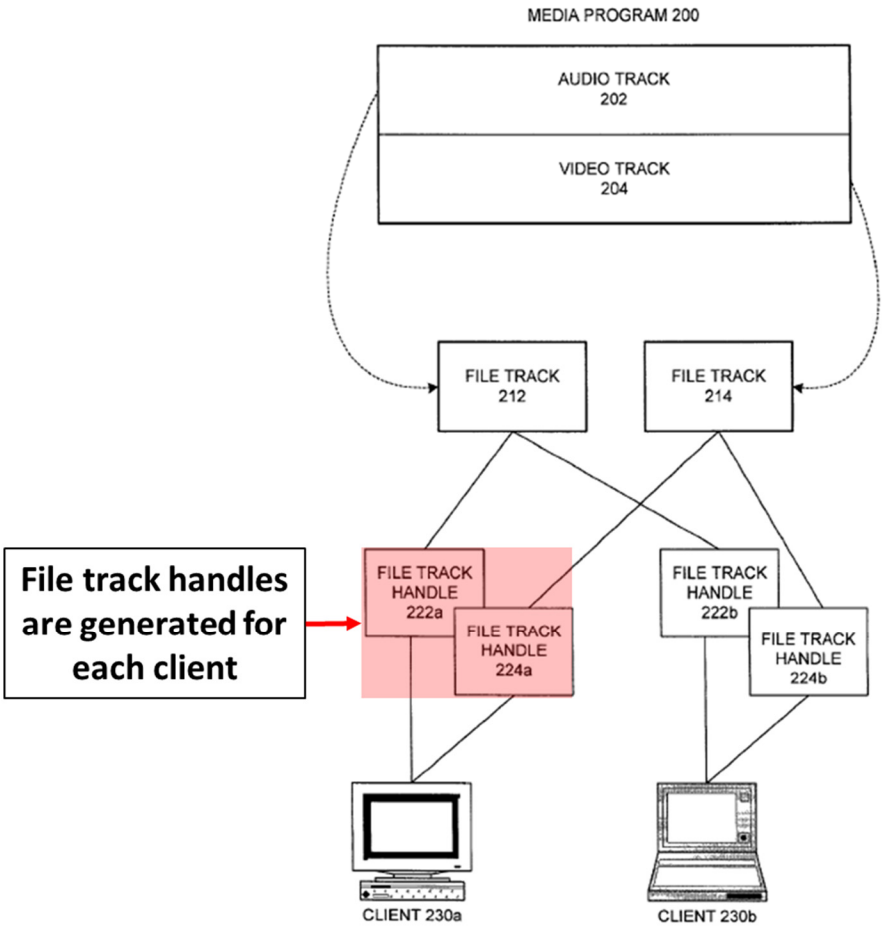
48, FIG. 2. For example, the "FAST" module within Rakoshitz's tool "provides for classification 203 of information such as parameters 213 including application" and "measurement 219 of various parameters." SAMSUNG-1046, 12:20-33, FIG. 2. As described above, in the combination, log reports are generated based on metadata determined from Riggs' log report generators and usage data determined by Rakoshitz's tool, both of which determine this information for each application. *See supra*, §§III.A.6.[1.6], III.B.3.[2], III.B.3.[4]. Accordingly, Riggs' log report generators, in combination with Rakoshitz's tool, are also "***a usage and classification reconciliation agent***" that "***receive[s] application association information stored by the first and second requesting application storing functions***" and "***maintain[s] the usage and classification database based in part on the received application association information***" at least because Riggs' log report generators receive data regarding application data usage for each application from Rakoshitz's tool. *See supra*, §§III.A.6.[1.6], III.B.3.[2], III.B.3.[4]; SAMSUNG-1001, 117:12-24; SAMSUNG-1003, ¶112.

D. [GROUND 1D] – Bennett, Rakoshitz, Rybak, Riggs, and Srikantan render claim 10 obvious

1. Overview of Srikantan

Srikantan discloses techniques for "streaming a media track to multiple clients using a single copy of the track's metadata, rather than making separate copies of the metadata for each stream." SAMSUNG-1055, Abstract, ¶¶[0040]-[0047].

To manage the streaming of the track to multiple clients, Srikantan generates a "file track handle" that "acts as an interface between its client stream … and the single instance of media metadata." SAMSUNG-1055, ¶¶[0008]-[0009], [0044]-[0046], [0051]-[0054], [0059], [0071], FIG. 2. Srikantan also discloses that the receiving client "may issue commands to control the stream—e.g., to rewind or fast forward to locate a particular part of the media, to pause the streaming, etc." SAMSUNG-1055, ¶¶[0024], [0029], [0060], [0073]; SAMSUNG-1003, ¶48.



SAMSUNG-1055, FIG. 2.

2. The combination of Bennett, Rakoshitz, Rybak, Riggs, and Srikantan

It would have been obvious for a POSITA to incorporate Srikantan's techniques, to include a media streaming server that generates file track handles for media files streamed to the Bennett-Rakoshitz-Rybak-Riggs device. SAMSUNG-1041, ¶¶[0025], [0076], FIG. 3; SAMSUNG-1055, ¶¶[0008]-[0009], [0044]-[0046], [0051]-[0054], [0059], [0071], FIG. 2. As Dr. Traynor explains, a POSITA would have recognized and found obvious that generating multiple copies of metadata associated with a media file is resource intensive, and Srikantan's techniques would have reduced server-side computing requirements by reducing the need to generate multiple copies of metadata for a streamed media file. SAMSUNG-1055, ¶¶[0004], [0007]-[0009], [0019]-[0020], [0024]-[0026]; SAMSUNG-1003, ¶49. Also, as Srikantan notes, sharing a single file handle among multiple clients "can lead to a great deal of contention among the client streams as each one attempts to seek to (i.e., find) and extract a different media segment or sample"—streams that a POSITA knows cost precious bandwidth. SAMSUNG-1055, ¶¶[0005]-[0006]; SAMSUNG-1046, 7:40-50, 14:61-67, Table-2 (describing "real-time audio and video" applications as "[h]igh bandwidth" applications); *see supra*, §III.A.3; SAMSUNG-1003, ¶49. To that end, a POSITA would have recognized the bandwidth savings that would be gained from eliminating conflicting streaming sessions using Srikantan's techniques. *Id*.

Incorporating Srikantan's media streaming server and file track handle generation techniques into the Bennett-Rakoshitz-Rybak-Riggs device would have been nothing more than the application of known techniques (e.g., generating a file track handle for a media file) to a known structure (e.g., media streamed by the Bennett-Rakoshitz-Rybak-Riggs device) to yield predictable results (e.g., the Bennett-Rakoshitz-Rybak-Riggs device referencing the Srikantan file track handle when streaming a media file). *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 417 (2007). As Dr. Traynor explains, a POSITA would have expected success in implementing this combination because generating and using file handles to reference media streamed on the Bennett-Rakoshitz-Rybak-Riggs device using Srikantan's techniques simply applies Srikantan's teachings—with little modification—to a system that Srikantan itself envisions within its own disclosure (e.g., a device that streams media accessed from a server). SAMSUNG-1055, ¶¶[0023]-[0033]; SAMSUNG-1003, ¶50. Indeed, the modification would have (1) involved routine programming ability that would have been well within the skill of a POSITA, (2) introduced concepts that were already well known in the industry ("file handles," or "file descriptors"), and (3) required little to no modification to Srikantan's envisioned system. SAMSUNG-1055, Cover, ¶¶[0016]-[0018], [0083]; SAMSUNG-1003, ¶50. As Dr. Traynor explains, "file handles were, and still are, a well-known technique to ensure continuity of a file being shared in a server-client system, as

evidenced by Srikantan pre-dating the Critical Date by almost a decade." SAMSUNG-1003, ¶50; SAMSUNG-1055, Cover; SAMSUNG-1058, 3 (defining a file handle as "[a] temporary designation an operating system assigns to an opened file during any given session"); SAMSUNG-1059, 3 (defining a file descriptor as "[a] value used to identify an open file for the purpose of file access").

3. Analysis

[10.1]

As described above, Bennett's "CALL requests," sent by the application ("***from the application launching the data transfer request***") to the UA 202 include "a network address of a remote host from which media connections will be accepted" ("***a network resource identifier***"), and this information is forwarded to the MA 206 via an "OPEN request" ("***the media service manager to receive***"). SAMSUNG-1041, ¶¶[0034], [0050]-[0056], Table-3; *see supra* §III.A.6.[1.4]. As discussed above, Riggs discloses that "the global address of content" ("***a network resource indicator that identifies the media object***") is "typically" provided "in the form of a Uniform Resource Locator (URL)" (e.g., a "feed URL"—"***the media object***"—provided by the requesting application). SAMSUNG-1043, 1:25-35, 5:54-62, 6:38-43; *see supra* §III.B.3.[3]; SAMSUNG-1003, ¶113.

[10.2]

Srikantan discloses that a "file track handle" ("***a media object handle descriptor***") is created when a client requests a media file (a "stream") stored on a server. SAMSUNG-1055, ¶¶[0008]-[0009], [0044]-[0046], [0051]-[0054], [0059], [0071], FIG. 2; SAMSUNG-1058, 3; SAMSUNG-1059, 3. In the combination, a POSITA would have recognized and found obvious that in response to the "OPEN request" of the UA 202, the MA 206 ("***the media service manager***") would have retrieved Srikantan's "file track handle" ("***a media object handle descriptor***") for the stream referenced in the network address of the OPEN request. SAMSUNG-1041, ¶¶[0034]-[0035], [0050]-[0056], [0086], Table-3; SAMSUNG-1003, ¶114. Once retrieved, the MA 206 would have returned the file track handle ("***a media object handle descriptor***") to the UA 202 via the "OPEN response," which would then return the file track handle to the application via the "CALL response" ("***return to the application a media object handle descriptor***"). *Id*.

As Dr. Traynor explains, "a POSITA would have leveraged the MA 206 to return the file handle of Srikantan to the application because this arrangement is consistent with the responsibilities of the MA 206, as disclosed in Bennett." SAMSUNG-1003, ¶115. For example, Bennett describes that the MA 206 "manages media connections" to include "Real-Time Transport Protocol

(RTP)" sessions. SAMSUNG-1041, ¶¶[0025], [0034], [0054]-[0055]. Specifically, the OPEN request sent to the MA 206 is an instruction "to initiate an RTP session," and in response, the MA 206 retrieves information from the host ("the network address of the host and port opened for the RTP connection"). SAMSUNG-1003, ¶[0054]. Similarly, Srikantan describes that its media servers use "RTP (Real-Time Transport Protocol) to deliver the stream to the client." SAMSUNG-1055, ¶¶[0027], [0046], [0072]. For at least this reason, as Dr. Traynor notes, a POSITA would have recognized that when establishing an RTP session with a host server, the MA 206 ("***the media service manager***") would have retrieved a file handle ("***media object handle descriptor***") for the requested stream, along with the "network address of the host and port," to share with the application streaming the file in the RTP session, such that the application could manipulate the stream in the session while informing the hosting server of the applied commands (e.g., "pause," "rewind," or "fast-forward"). SAMSUNG-1041, ¶¶[0077], [0080], [0086], Table-3; SAMSUNG-1055, ¶¶[0024], [0029], [0060], [0073]; SAMSUNG-1003, ¶115.

Further, this file handle would have been specifically "***return[ed] to the application***" because, as Bennett notes, "the user application 150 may want to receive the media stream" and, further, "the user application 150 can direct how media or messages are routed," to include specifying commands like "PAUSE"

or "RESUME." SAMSUNG-1041, ¶¶[0076]-[0077]; SAMSUNG-1003, ¶116.

[10.3]

Srikantan discloses a "media streaming server" ("***a proxy service***") that "is configured to stream QuickTime media and/or other forms of media, in a unicast or multicast mode, over a proprietary or publicly accessible network such as the Internet" ("***one or more network data transfers comprising the media object***"). SAMSUNG-1055, ¶¶[0027]-[0033], FIG. 1. Additionally, because Bennett's MA 206 "manages media connections" to include "Real-Time Transport Protocol (RTP)" sessions—the same RTP sessions Srikantan discloses its media streaming server maintains for streaming media—the MA 206 would "***call***" the media streaming server hosting the stream ("***a proxy service***") to "***perform one or more network data transfers comprising the media object***" using an RTP session. SAMSUNG-1041, ¶¶[0025], [0034], [0054]-[0055]; SAMSUNG-1055, ¶¶[0027], [0046], [0072]; *see supra* [10.2]; SAMSUNG-1003, ¶117.

Additionally, as Dr. Traynor explains, a POSITA would have recognized and found obvious that Srikantan's "media streaming server" is "***a proxy service***" (such that the Bennett-Rakoshitz-Rybak-Riggs-Srikantan device "***calls a proxy service to perform one or more network data transfers comprising the media object***"), at least because Srikantan discloses that the media streaming

server can "redirect to clients media that it receives from another entity, such as a live event, a video camera, a broadcast from another server (e.g., server 130)." SAMSUNG-1055, ¶¶[0025], [0032], [0039], FIG. 1; SAMSUNG-1003, ¶118. Srikantan discloses that in this mode, the media streaming server "acts as a client" when it receives content from another server to send to the requesting device, which as Dr. Traynor explains, is a mode of operation consistent with a "***proxy***" as of the Critical Date. SAMSUNG-1056, 3-4 (describing a "proxy" as "an intermediate application program that acts as both a client and a server"); SAMSUNG-1057, 3 (describing that a "proxy" is "a device or program empowered to act for another"); SAMSUNG-1003, ¶118.

[10.4]

Bennett discloses that the MA 206 receives "requests to control the media stream, such as a PAUSE request to pause an active media stream, and a RESUME request to resume a paused media stream" ("***accept … commands***"). SAMSUNG-1041, ¶[0076]; SAMSUNG-1055, ¶¶[0024], [0029], [0060], [0073] (describing other examples of commands). As Dr. Traynor explains, a POSITA would have recognized and found obvious that these commands are issued "***from the application***" because Bennett describes, in the same paragraph discussing the above commands, that "the user application 150 can direct how media or messages are routed." SAMSUNG-1041, ¶[0077]. Additionally, Dr.

Traynor notes that "the application is the interface between the user and the stream and, given that streaming commands like 'pause' and 'stop' are typically in response to user action, these commands would have typically originated "***from the application***" as a result of the user interacting with the application." *See, e.g.*, SAMSUNG-1041, ¶¶[0024] (describing a "user application 150"), [0077]; SAMSUNG-1003, ¶119.

Additionally, the "PAUSE" and "RESUME" commands of Bennett are "***associated with the media object handle descriptor***" at least because these commands are applied to the stream described by the "***media object handle descriptor***." SAMSUNG-1041, ¶¶[0034]-[0035], [0050]-[0056], [0086], Table-3; SAMSUNG-1055, ¶¶[0008]-[0009], [0044]-[0046], [0051]-[0054], [0059], [0071], FIG. 2; *see supra* [10.2] (describing that a file track handle is created and shared for a stream once the stream is requested); SAMSUNG-1003, ¶120.

[10.5]

Bennett's PAUSE and RESUME commands control the media stream played by the MA 206's media player, and thus the MA 206 "***control[s] playback of the media data by the media player based on the commands***." SAMSUNG-1041, ¶¶[0077], [0080], Table-3. Srikantan similarly describes that commands are applied to retrieved streams to manipulate the content. SAMSUNG-1055, ¶¶[0024], [0029], [0060], [0073]; SAMSUNG-1003, ¶121.

IV. PTAB DISCRETION SHOULD NOT PRECLUDE INSTITUTION

A. 35 U.S.C. §325(d) – *Advanced Bionics*

Advanced Bionics and the *Becton* factors strongly favor institution. *Advanced Bionics LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) ("*Advanced Bionics*") (precedential); *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15 2017) ("*Becton*") (precedential).

There is no indication in the '918 Patent's file history that the Examiner substantively considered any of the prior art applied in this Petition prior to allowing the application that issued as the '918 Patent. SAMSUNG-1002, 381-390; *see supra*, §II.B. Because the '918 Patent's prosecution did not involve any discussion between the applicant and the Examiner regarding the teachings of the prior art applied in this Petition, the invalidity challenge based on the prior art asserted in this Petition is not the same as, or substantially similar to, art and arguments previously presented to the Office in connection with the '918 Patent. *See, generally,* SAMSUNG-1002. Accordingly, neither condition of the first prong of the *Advanced Bionics* framework is met, and there is no need to reach the second prong to resolve against discretionary denial under Section 325(d). *See*, *e.g.*, *Oticon Medical AB et. al. v. Cochlear Ltd.*, IPR2019-00975, Paper 15 at 20 (PTAB Oct. 16, 2019). To the extent the Examiner considered references substantively similar to the references

asserted in the Petition, the failure to issue a rejection of the Challenged Claims using those references constitutes material error.

Additionally, the Examiner also materially erred by accepting the applicant's claimed priority date (Jan. 28, 2009), failing to determine that the claims lacked adequate support in the alleged priority documents, and only considering prior art that pre-dated Jan. 28, 2009. SAMSUNG-1002, 381-390; *Lam Rsch. Corp. v. Inpria Corp.*, IPR2024-00033, Paper 13 (Apr. 24, 2024).

For at least the above-noted reasons, Petitioner respectfully submits that discretionary denial is unwarranted, and that the Board should instead institute IPR based on the instant Petition's grounds.

B. 35 U.S.C. §314(a) – *Fintiv*

Petitioner's arguments are compelling with substantial supporting evidence, which "alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*." SAMSUNG-1060, 4-5. Moreover, the *Fintiv* factors do not favor denial.

Factor 1 is neutral; neither party has requested a stay in co-pending litigation.

Factor 2 is neutral; the Court's trial date is speculative and subject to change. The Board will likely issue its Final Written Decision around March 2026, approximately 5 months after the scheduled trial (10/6/2025). SAMSUNG-1064,

1. However, as the Board and Director have previously understood, "scheduled trial dates are unreliable and often change." SAMSUNG-1060, 8.

Factor 3 favors institution; Petitioner filed this Petition months ahead of the one-year time bar, while litigation is in its early stages. Beyond exchanging preliminary infringement/invalidity contentions, the parties and the District Court have yet to expend significant resources on invalidity.

Factor 4 favors institution because Petitioner has provided a stipulation that it will not pursue the IPR grounds in the EDTX Litigation. SAMSUNG-1061. Thus, "[i]nstituting trial here serves overall system efficiency and integrity goals by not duplicating efforts and by resolving materially different patentability issues." *Apple, Inc. v. SEVEN Networks, LLC*, IPR2020-00156, Paper 10, 19 (6/15/2020); *see Sand Revolution II, LLC v. Continental Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24, 12 (6/16/2020).

Factor 5: The parties in the parallel litigation are the same.

Factor 6 favors institution; the Petition's merits are compelling.

V. CONCLUSION AND FEES

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

VI. 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)

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Samsung") are the real parties-in-interest.

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

The '918 Patent is the subject of civil action Headwater Research LLC v. Samsung Electronics Co., Ltd. et al., 2-23-cv-00641 (EDTX), filed December 29, 2023 (SAMSUNG-1004). Petitioner is not aware of any other disclaimers, reexamination certificates, or IPR petitions addressing the '918 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
W. Karl Renner, Reg. No. 41,265 Fish & Richardson P.C. 60 South Sixth Street, Suite 3200 Minneapolis, MN 55402 Tel: 202-783-5070 Fax: 877-769-7945 Email:IPR39843-0182IP2@fr.com	Jeremy J. Monaldo, Reg. No. 58,680 Jennifer J. Huang, Reg. No. 64,297 60 South Sixth Street, Suite 3200 Minneapolis, MN 55402 Tel: 202-783-5070 Fax: 877-769-7945 PTABInbound@fr.com

D. Service Information

Please address all correspondence and service to the address listed above. Petitioner consents to electronic service by email at IPR39843-0182IP2@fr.com (referencing No. 39843-0182IP2 and cc'ing PTABInbound@fr.com, axf-ptab@fr.com, jjm@fr.com and jjh@fr.com).

Respectfully submitted,

Dated September 9, 2024

/Jeremy J. Monaldo/

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(Control No. IPR2024-01397)

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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 13,064 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated September 9, 2024

/Jeremy J. Monaldo/

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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 September 9, 2024, 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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