IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS AMERICA, INC.,

SAMSUNG ELECTRONICS CO., LTD.,

Petitioners,

v.

KONINKLIJKE KPN N.V.,

Patent Owner.

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Case No. IPR2025-00502

U.S. Patent No. 9,667,669

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PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,667,669

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LIST OF CHALLENGED CLAIMS

Claim[1]	Limitation
1pre	A method for managing associated sessions in a network, the network having a network element configured for managing associated sessions between the network and at least one user equipment, the method comprising:
1a	providing a composition session identifier for associating sessions in the network;
1b	after providing the composition session identifier, exchanging the composition session identifier between a user equipment and the network element a first time;
1c	associating two or more sessions with the composition session identifier by exchanging the composition session identifier at least a second time, wherein exchanging the composition session identifier at least a second time comprises the network element exchanging the composition session identifier with the user equipment;
1d	initiating establishment of a composition session, the composition session being a signaling session for facilitating management of the two or more sessions and exchanging the composition session identifier between the user equipment and the network element as part of said establishment, the composition session being different from the two or more sessions; and

[1] Claims 1 and 21 are not separately challenged herein, but provide the independent claim for challenged dependent claims 2-9, 13-14, and 23, and thus are reproduced for convenience.

Claim[1]	Limitation
1e	modifying the composition session, wherein modifying the composition session comprises using signaling in the composition session to terminate all of the two or more sessions.
2a	The method according to claim 1, wherein providing the composition identifier comprises: the user equipment generating the composition session identifier; and
2b	sending a request for initiating the composition session from the user equipment to the network element, the request comprising the composition session identifier.
3	The method according to claim 2, wherein the request for initiating the composition session further comprises one or more session identifiers and, optionally, resource reservation information and/or resource allocation information associated with the one or more sessions identified by the session identifiers.
4	The method according to claim 1, wherein providing the composition identifier comprises: sending a request for initiating the composition session from the user equipment to the network element; the network element generating the composition session identifier in response to the receipt of the request for initiating the composition session; and the network element sending the composition session identifier to the user equipment.
5	The method according to claim 4, wherein the request for initiating a composition session further comprises one or more session identifiers and, optionally, resource reservation information and/or resource allocation information associated

Claim[1]	Limitation
	with the one or more sessions identified by the session identifiers.
6	The method according to claim 1, wherein the method further comprises: the user equipment initiating the two or more associated sessions by sending two or more session initiation requests for a session to the network element, each request comprising the composition session identifier.
7	The method according to claim 6, wherein the two or more associated sessions comprise at least one of a broadcast (BC) session associated with a BC identifier (BCServiceID), a content-on-demand (CoD) session associated with a CoD identifier (CoDID), a Targeted Advertisement Insertion (TAI) session associated with a TAI identifier, network personal video content (NPVC) session associated with a NPVR identifier (NPVRContentID), a user generated content (UGC) session associated with a UGC identifier, a Public Switched Telecommunications Network (PSTN) emulation session associated with a PSTN emulation identifier, or a shared content (SC) session associated with a SC identifier.
8	The method according to claim 1, wherein the method further comprises: the network element initiating the two or more associated sessions by sending two or more requests for a session to the user equipment, each request comprising the composition session identifier.
9	The method according to claim 8, wherein the two or more associated sessions comprise at least one of a broadcast (BC) session associated with a BC identifier (BCServiceID), a content-on-demand (CoD) session associated with a CoD

Claim[1]	Limitation
	identifier (CoDID), a Targeted Advertisement Insertion (TAI) session associated with a TAI identifier, network personal video content (NPVC) session associated with a NPVR identifier (NPVRContentID), a user generated content (UGC) session associated with a UGC identifier, a Public Switched Telecommunications Network (PSTN) emulation session associated with a PSTN emulation identifier, or a shared content (SC) session associated with a SC identifier.
13	The method according to claim 1, wherein the network is an IP Multimedia Subsystem (IMS) network comprising an IMS core connected to a Service Control Function (SCF), wherein the SCF is configured for managing associated sessions between the network and the User Equipment, wherein the network element is the SCF.
14	A non-transitory computer readable medium having stored thereon software instructions that, if executed by a user equipment or a network element, cause the user equipment or the network element to perform operations comprising the method according to claim 1.
15pre	A system for managing associated sessions in a network, the system comprising:
15a	a network element; and
15b	a user equipment,
15c(i)	wherein the network element is configured to (i) manage sessions between the network element and the user equipment,
15c(ii)	(ii) exchange a composition session identifier with the user equipment a first time, and

Claim[1]	Limitation
15c(iii)	(iii) associate two or more sessions with the composition session identifier by exchanging the composition session identifier at least a second time, wherein exchanging the composition session identifier at least a second time comprises the network element exchanging the composition session identifier with either the user equipment or a second user equipment different from the user equipment,
15d(i)	wherein the user equipment is configured to (i) provide the composition session identifier and
15d(ii)	(ii) after providing the composition identifier, exchange the composition session identifier with the network element, and
15e	at least one of the network element or the user equipment is configured to initiate a composition session, the composition session being a signaling session for facilitating management of the two or more sessions and exchanging the composition session identifier between the user equipment and the network element, the composition session being different from the two or more associated sessions, and
15f	wherein the network element is configured to modify the composition session using signaling in the composition session to terminate all of the two or more sessions.
16a	The user equipment of claim 15, wherein the user equipment comprises: an ID generator for generating the composition session identifier; and
16b	a multimedia client configured to (i) receive the composition session identifier from the ID generator, (ii) exchange the composition session identifier with the network element, (iii) initiate one or more multimedia sessions with the network element, and (iv) exchange the composition session identifier with the network element during set up of the multimedia sessions.

Claim[1]	Limitation
17	The user equipment according to claim 16, wherein the user equipment is configured to initiate the composition session.
18a	The network element of claim 15, wherein the network element comprises: a session manager configured to exchange the composition session identifier with the user equipment and to set up and modify multimedia sessions; and
18b	storage configured to store composition session information, the composition session information comprising information regarding composition session identifiers and the two or more associated sessions.
19	The network element according to claim 18, further configured for at least one of initiating, terminating or modifying the composition session.
20	The network element according to claim 18, the network element further comprising: an ID generator configured to generate the composition session identifier.
21pre	A method for managing associated sessions in a network, the network having a network element configured for managing associated sessions between the network and at least one user equipment, the method comprising:
21a	providing a composition session identifier for associating sessions in the network;

Claim[1]	Limitation
21b	after providing the composition session identifier, exchanging the composition session identifier between a user equipment and the network element a first time;
21c	associating two or more sessions with the composition session identifier by exchanging the composition session identifier at least a second time, wherein exchanging the composition session identifier at least a second time comprises the network element exchanging the composition session identifier with the user equipment;
21d	initiating establishment of a composition session, the composition session being a signaling session for facilitating management of the two or more sessions and exchanging the composition session identifier between the user equipment and the network element as part of said establishment, the composition session being different from the two or more sessions; and
21e	modifying, using signaling in the composition session, all of the two or more sessions.
23	The method according to claim 21, wherein modifying the composition session, using the signaling in the composition session, comprises selectively pausing data streams of the two or more sessions in response to a detection of an incoming call destined for the user equipment.

I. INTRODUCTION

U.S. Patent No. 9,667,669 (the "'669 patent") is directed to a purported improvement to networked multimedia systems using a composition session to associate multiple component streams. The composition session enables a network device to collectively manage distinct media streams that may be combined to deliver a single user experience (*e.g.*, a television broadcast, on-demand content, and user-generated content that are combined to provide personalized streaming content). In this way, the plurality of associated media streams can be collectively controlled by an element on the network, *e.g.*, by pausing all of the media streams associated with the session to deliver an advertisement.

The '669 patent does not purport to invent the various network protocols used to initiate the claimed composition session and manage the associated multimedia streams, however. The specification relies on the well-known IP Multi-Media Subsystem (IMS) architecture, defined and standardized by the 3rd Generation Partnership Project (3GPP), and the Session Initiation Protocol (SIP) defined as part of that architecture. EX1001, 1:23-40. Instead, the purported improvement claimed by the '669 patent is the use of these well-known architectures and protocols to collectively manage multiple associated media streams at the network element level. *Id.*, 2:47-3:11.

The claimed improvements, however, were well known in the art years before the date of the '669 patent. For example, over seven years before the '669 patent, Widegren disclosed the same solution to the same problem presented by the '669 patent: specifically, the creation of "multimedia sessions" in an IMS architecture using SIP in order to "communicate effectively and efficiently the relationship between a session" and "media flows in that session" in order to apply "[s]ession level policy controls." EX1005, ¶¶64-66. Other details relating to the well-known IMS architecture and SIP protocol are disclosed in additional references, such as Widegren-793, Astrom, and ETSI TS 183 063. The '669 patent adds nothing new to these well-known techniques.

II. STANDING

Petitioners certify the '669 patent is available for *inter partes* review and that Petitioners are not estopped from requesting IPR under 35 U.S.C. § 315(e)(1).

III. GROUNDS

Petitioners present the following grounds of invalidity:

Ground	Basis	Reference(s)	Claims
1	§103	Widegren, Widegren-793	2-6, 8, 14-18, 20
2	§103	Widegren, Widegren-793, ETSI TS 183 063	7, 9
3	§103	Widegren, Widegren-793, Astrom	13, 23

IV. POSITA

A POSITA at the time of the '669 patent had at least a bachelor's in EE/CE/CS, or equivalent, and two years of experience with computer networking technology. EX1003, ¶47. More education can supplement practical experience and vice versa. *Id.* Petitioners' expert exceeded this by the priority date. *Id.*

V. BACKGROUND

A. '669 patent

The '669 patent is generally directed to managing "associated sessions" in a network. *Id.*, Abstract. At its core, the '669 patent purports to improve on the "IP Multi-Media Subsystem (IMS) architecture," and, in particular, to "blended or composite services, which combine services of various platforms … (e.g. phone, multicast, broadcast, television/video, content on demand etc.)." *Id.*, 1:23-40. "For example an end-user may compose a personalized multimedia service by enriching a main service, for example a TV broadcast (BC) with personally selected multi-media content, such as content-on-demand (CoD), user-generated content (UCG), etc., originating from different sources in the network." *Id.*, 1:44-49.

According to the '669 patent, in prior art implementations of personalized multimedia services, "the managing of the enriched television experience" must be performed "by the end-user" because "[i]nformation regarding the relation between the different multimedia streams originating from different sources in the network … only exists at the user equipment." *Id.*, 1:64-2:9. However, it may "be convenient

and/or even necessary to manipulate the personalized television experience from within the network," for example, "to simultaneously pause associated multimedia streams … in order to deliver a targeted advertisement" or in "the situation of an incoming phone call." *Id.*, 2:10-26. In those scenarios, it "would be convenient if the network could only pause the streams related to the personalized television experience and not those related to" other tasks, such as "background download or recording sessions." *Id.*, 2:26-33.

The '669 patent purports to solve this alleged problem in the art by using a "composition session" with a "composition session identifier" to "associat[e] two or more sessions with the composition session by exchanging the composition session identifier" between a network element and a user equipment. *Id.*, 2:66-3:11. The composition session identifier "allows network centric administration" of multimedia sessions by associating the multimedia session with a composition session identifier. *Id.*, 3:25-32. A new multimedia session may thus "be associated with other multimedia sessions that may have already been assigned to the same composition session identifier." *Id.*, 3:32-34. The associated sessions may then be managed by the network device collectively, *e.g.*, by "collective[ly] pausing (for example, in response to an incoming call, destined for the user equipment), replaying, diverting of the data streams associated with the group of sessions." *Id.*, 3:35-43.

In fact, however, the claimed techniques for associating and managing multimedia data streams were well known in the prior art before the '669 patent, as demonstrated below.

B. Prosecution History

1. Application No. 13/144,385

The application that issued as the '669 patent was filed on July 13, 2011, and claims priority to a PCT application dated January 19, 2010, and a European patent application filed January 19, 2009. EX1001. For the purposes of this proceeding only, Petitioner relies on January 19, 2009 as the priority date of the '669 patent.

The concept of a composition session and associated identifier for associating multiple media stream sessions at a network device was well known by the date of the '669 patent, and the Examiner repeatedly rejected the claims in view of such references, including U.S. Patent Pub. Nos. 2009/0177778 ("Turk"), 2008/0288644 ("Gilfix"), and 2008/0089344 ("Jansson"); EX1002, 181-193, 269-280, 415-424, 470-480, 511-521. In response to these rejections, the Applicant amended the claims several times to add mundane details regarding the session initiation process, including that two or more sessions are associated with a composition session by exchanging the composition session identifier between the user equipment and the network device at least two times, all of which the Examiner determined to be in the prior art. *Id.*, 487-491. Applicant then further amended the claims to recite that

signaling in the composition session may be used to modify all of the associated sessions (including by terminating those sessions). *Id.*, 145-151. The claims as amended were subsequently allowed. *Id.*, 113-117

2. IPR2022-00557

On February 10, 2022, Ericsson filed a petition for *inter partes review* in IPR2022-00557, challenging claims 1-3, 6, 8, 10-12, 21-22, and 24-25 of the '669 patent based on a combination of six references, none of which are relied upon in this Petition. *Ericsson Inc. v. Koninklijke KPN N.V.*, IPR2022-00557, Paper 2 (Feb. 10, 2022). On October 8, 2022, the Board instituted an *inter partes review*. *Ericsson*, IPR2022-00557, Paper 8 (Oct. 8, 2022). A Final Written Decision issued on October 4, 2023, determining that claims 1, 10-12, 21, 22, 24, and 25 of the '669 patent were unpatentable. *Ericsson*, IPR2022-00557, Paper 34 (Oct. 4, 2023) ("Ericsson FWD"). Claims 2, 3, 6, and 8 were determined to not be unpatentable because the prior art of record did not disclose initiating two or more associated sessions by sending two or more session initiation requests, each comprising the composition session identifier. *Id.*, 30-33.

C. Claim Construction

Except as set forth below, unless otherwise indicated, and for this proceeding only, the claim terms should be given their plain and ordinary meaning under *Phillips*. EX1003, ¶¶55-57.

In the *Ericsson* IPR, the Board construed three terms, as set forth in the table below. Ericsson FWD, 8-9.

Term	Construction
"associated sessions"	"sessions that should not be managed independent from each other"
"composition session"	"a separate signaling session for managing the associated sessions that is initiated using a different signaling session than the associated sessions"
"exchanging the composition session identifier"	"sending the composition session identifier in either direction"

For the purposes of this proceeding only, Petitioner adopts the Board's prior constructions and applies them in its analysis below.

VI. SUMMARY OF PRIOR ART

A. Widegren (EX1005)

U.S. Pat. Pub. No. 2002/0120749 was filed on November 5, 2001, and published on August 29, 2002. It is therefore prior art under at least pre-AIA 35 U.S.C. § 102(a).

Like the '669 patent, Widegren relates to an "IP Multimedia Service ('IMS')" that "may be defined 'on top' of" a cellular communications network, using "IP application signaling" such as the "session initiation protocol (SIP) and session description protocol (SDP)." EX1005, ¶63. Also like the '669 patent, Widegren recognizes that the "relationship of the various media streams" are normally "under the control of the end user establishing the multimedia session [and] the various media streams," which prevents elements on the network from applying "[s]ession

level policy controls." *Id.*, ¶64. Widegren then discloses the same solution to this well-known problem as the '669 patent: "providing an efficient and effective mechanism … to permit session level control" of multiple multimedia streams by "setting up and orchestrating a multimedia session … [u]sing session signaling." *Id.*, ¶¶66-67. In particular, Widegren's session signaling includes a "session identifier that identifies the session," which is distinct from the "media data stream identifier" corresponding to each of the associated media streams and performs the same function as the '669 patent's composition session identifier. *Id.*, ¶71.

Figure 18 provides a process flow of Widegren's process, where a multimedia session is initiated and each media data stream is associated with the multimedia session through media binding information. The media binding information contains the session, media stream, and policy-related information from the multimedia system.

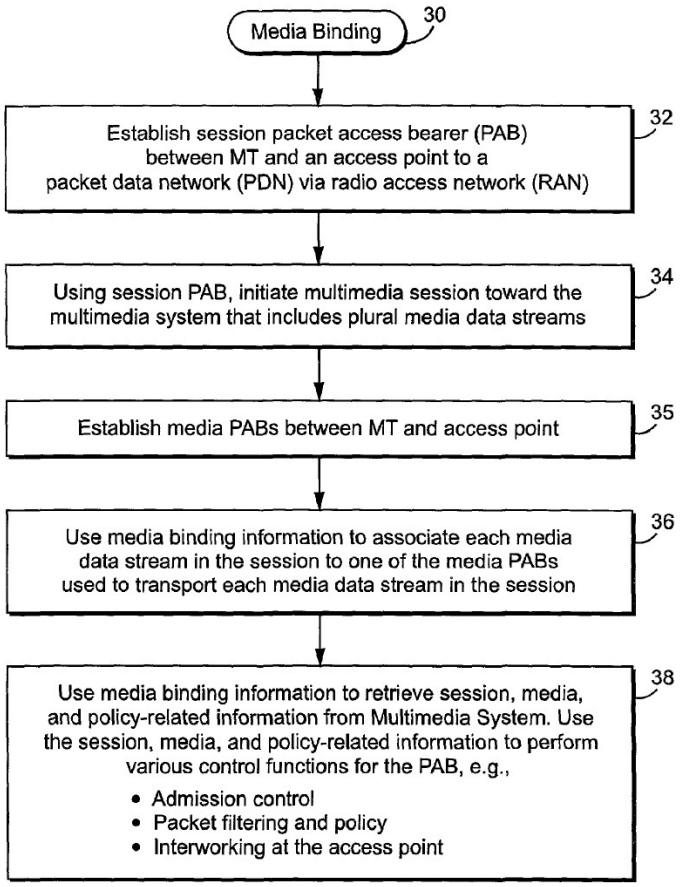


Fig. 18

B. Widegren-793 (EX1006)

U.S. Pat. No. 6,621,793 was filed on May 21, 2001, and issued September 16, 2003. It is therefore prior art under at least pre-AIA 35 U.S.C. § 102(a).

Widegren-793 discloses policy control mechanisms for packet data networks. EX1006, Abstract. Among other things, Widegren-793 discloses a "session termination" event that "terminates the session directly to the UE" and "results in the termination of the bearer." *Id.*, 14:24-35.

C. Astrom (EX1007)

WIPO Publication No. 2007/101473 was filed on March 7, 2006, and published on September 13, 2007. It is therefore prior art under at least pre-AIA 35 U.S.C. § 102(a).

Astrom relates to an IPTV system using a standard IMS communication system. EX1007, Abstract. In particular, Astrom discloses a method of handling incoming calls in an IPTV system using an "Incoming Call Notification sequence with Time-Shift functionality." *Id.*, 18:6-21:3. In this scenario, when an incoming call is received on the IPTV device, the user may accept the call and start a time-shift operation. *Id.*, 19:16-25. In response, the IPTV application server begins recording the currently viewed television channel, and display of television content on the user's device is interrupted in order to accept the incoming call. *Id.*, 19:27-20:20. When the call completes, the user may resume viewing the time-shifted (recorded) content, and the application server delivers the recorded content to the user's device for playback. *Id.*, 20:22-21:22.

D. ETSI TS 183 063 (EX1008)

ETSI TS 183 063 V2.1.0 is a Technical Specification published by the European Telecommunications Standards Institute ("ETSI"), titled "Telecommunications and Internet Converged Services and Protocols for Advanced

Networking (TISPAN); IMS-Based IPTV Stage 3 Specification." It bears a publication date of June 2008.

As discussed by Dr. Almeroth, Exhibit 1008 is a true and correct copy of ETSI TS 183 063 as published by ETSI on its website, etsi.org. EX1003, ¶67. ETSI TS 183 063 on its face bears a publication date of 2008-06. Dr. Almeroth opines that ETSI is a well-known organization that has promulgated well-known telecommunications standards, such as GSM, 3G, 4G, and 5G. Accordingly, Dr. Almeroth concludes that June 2008 date, which is further corroborated by the date on the ETSI website, is a highly reliable indicator of public availability to a POSITA. *Id.*, ¶68. In addition, the specification of the '669 refers to ETSI TS 183 063 as providing "standard procedures" to initiate multimedia sessions, thereby acknowledging that ETSI TS 183 063 was published and available as of the date of the alleged invention of the '669 patent. EX1001, 11:10-12, 11:31-33, 12:37-43.

ETSI TS 183 063 describes procedures for "protocols and their possible enhancements to support IPTV services." EX1008, 10. The disclosed protocols are based on an IMS architecture as disclosed in Widegren. *Id.*, 14. ETSI TS 183 063 discloses several different types of sessions that may be supported, including a broadcast (BC) service, a content on-demand (CoD) service, and a network-side personal video recorder (nVPR) service. *Id.*, 19-20, 22-23, 29-30.

VII. GROUNDS OF REJECTION[2]

A. Ground 1: Claims 2-6, 8, 14-20 are Rendered Obvious by Widegren in view of Widegren-793

Widegren discloses a multimedia session comprising a plurality of associated media streams for use in an IP Multimedia Subsystem. The multimedia session facilitates network management and control of the plurality of media streams associated with the multimedia session.

Widegren-793 discloses session-level policy controls, including policies for gating data flow between a user equipment and the network. In particular, Widegren-793 discloses a "session termination" event that terminates a session and the network bearer services associated with the session.

A POSITA would be motivated to combine Widegren and Widegren-793 such that Widegren-793's "session termination" event could be applied to Widegren's multimedia session, thereby terminating all of the bearers (media streams) associated with the multimedia session. EX1003, ¶¶69-72.

[2] Petitioners are not aware of any secondary considerations of non-obviousness identified by Patent Owner, though none would rise to the level of overcoming the invalidity opinions of Dr. Almeroth. EX1003, ¶69 n.31. Petitioners reserve the right to address any secondary considerations if raised by Patent Owner.

As set forth below, a POSITA would have been motivated to provide a "session termination" capability as disclosed by Widegren-793 for use with Widegren's multimedia sessions, rendering the challenged claims obvious.

1. Motivation to Combine

A POSITA would have been motivated to combine Widegren's multimedia sessions with Widegren-793's session termination capability. EX1003, ¶¶73-78.

First, Widegren and Widegren-793 are both references assigned to Ericsson with overlapping inventors, and directed to related improvements to the same underlying technology. For example, both Widegren and Widegren-793 are directed to improved quality-of-service in IP multimedia subsystems. EX1005, ¶3 ("The present invention generally relates to … coordinating Quality of Service (QoS) provisioning mechanisms in IP networks with multimedia applications."); EX1006, 11:33-37 ("The present invention … employ[s] policy mechanisms ... to provide policy driven filtering and gating of data flow over a QoS connection in a packet data network."). In addition, both references build on the same underlying technology, *i.e.*, IP Multimedia Subsystems built on a GPRS bearer service and using IP application signaling, namely, Session Initiation Protocol. EX1005, ¶63; EX1006, 9:18-24. *See* EX1003, ¶76.

Second, Widegren expressly references Widegren-793 as a "desirable policy control approach" for use with multimedia streams and multimedia sessions.

EX1005, ¶67 (citing "commonly-assigned U.S. patent application Ser. No. 09/861,817"); EX1003, ¶74.

Third, Widegren's multimedia sessions are specifically designed "to permit session level control" of packet access bearers relating to multimedia streams. *Id.* For example, Widegren explains that "[s]ession level policy controls, such as the service-based local policy control described in [Widegren-793] cannot automatically be applied to PDP contexts unless the relationship of the various media streams of the PDP contexts is known." EX1005, ¶65. Widegren then explains that the "chief problem addressed by this invention is how to communicative effectively and efficiently the relationship between a session, media flow in that session, and PDP context bearers established for those media flows," thus enabling session level policy controls such as those described in Widegren-793. *Id.*, ¶66; EX1003, ¶74.

Fourth, Widegren-793's session termination functionality provides an enhancement to data flow and filter functionality provided by Widegren. For example, Widegren discloses that its session-level admission control and policy enforcement rules are provided to a Gateway GPRS Support Node (GGSN) network element as part of a "Gate Set" command. EX1005, ¶¶190-191. Widegren-793 discloses more detailed techniques for filtering and gating data flows using policy control mechanisms, including sending a "session termination" event trigger to send

a "gate close" command, terminating the session and the associated media streams. EX1006, Abstract, 14:24-35; EX1003, ¶75.

A POSITA would have reasonably expected the combination to succeed. EX1003, ¶77. As the '669 patent, Widegren, and Widegren-793 all recognize, IP Multimedia Subsystems and Session Initiation Protocol were well known, standardized technologies well before the date of the '669 patent, and would have been familiar to a POSITA. Applying and combining techniques using these well-known standardized technologies, such as by adding support for a "session termination" event to Widegren's multimedia sessions, would have been well within the capabilities of a POSITA, and would have required nothing more than the application of known techniques to improve similar devices in a predictable way. EX1003, ¶77. Further, Widegren-793's "session termination" event could have been implemented in an IMS system as disclosed by Widegren using well-known existing software functions and methods. *Id.*

Finally, Widegren and Widegren-793 are analogous art to the '669 patent because all three are directed to managing sessions in a network, and in particular, in an IP Multimedia Subsystems using Session Initiation Protocol. EX1001, Abstract ("A method and system for managing associated sessions inn a network…"), 1:23-29 (discussing IMS and SIP); EX1005, Abstract ("Using session signaling, a multimedia session with plural media data streams is initiated …."), ¶63

(discussing IMS and SIP); EX1006, Abstract ("A method of filtering and gating data flow in a QoS connection" including "filtering data derived from session data received by the application server during the session."), 9:18-24 (discussing IMS and SIP); EX1003, ¶78.

2. Claim 1[3]

(a) 1pre: A method for managing associated sessions in a network, the network having a network element configured for managing associated sessions between the network and at least one user equipment, the method comprising:

A method for managing associated sessions in a network: Widegren discloses a "multimedia session" for managing "plural media data streams" (***associated sessions***). EX1005, Abstract. Widegren expressly discloses that the plural media data streams ***should not be managed independent from each other*** because in "multimedia sessions, it is important that network managers and service providers be able to monitor, control, and enforce the use of network resources and services based on 'policies' derived from certain established criteria." *Id.*, ¶64. Indeed, Widegren notes that a "chief problem addressed by [its] invention is how to

[3] Claims 1 and 21 were held to be unpatentable in the Ericsson FWD and are not independently challenged in this Petition; however, they are presented herein because the Petition challenges claims that depends from claims 1 and 21.

communicate effectively and efficiently the relationship between a session[and] media flows in that session" because the "interworking and cooperation between" network resource mechanisms for different media streams "is critical to ensure end-to-end quality of service." *Id.*, ¶66. Accordingly, Widegren's invention "overcomes these and other problems by providing an efficient and effective mechanism … to permit session level control" (*i.e.*, ***managing***) of the multimedia streams. *Id.*, ¶67; EX1003, ¶79.

Widegren's "plural media data streams" are also consistent with the '669 patent's description of ***associated sessions***. For example, the '669 patent discloses that the associated sessions may be a "main content stream" and "additional content streams," where "[o]ne session would comprise the stream with the main content and additional sessions for each of the additional streams would comprise the additional content items." EX1001, 1:55-63, 2:47-53; *see also id.*, 8:59-9:8 (example where "three multimedia sessions" comprising three separate video streams are associated together); EX1003, ¶80.

Widegren further discloses that its multimedia session manages multimedia streams in "Internet Protocol (IP) ***networks***." *Id.*, ¶3. The IP network may include an "IP backbone network 104" that a particular user connects to through a "local access network 105," as illustrated in Figure 1 (reproduced below).

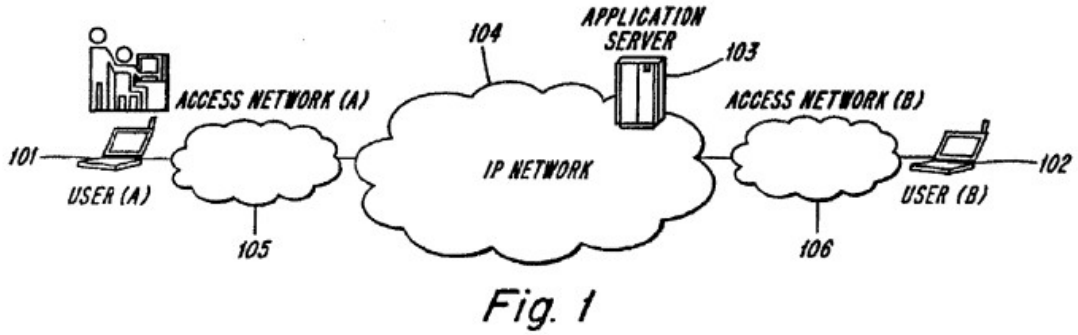


Fig. 1

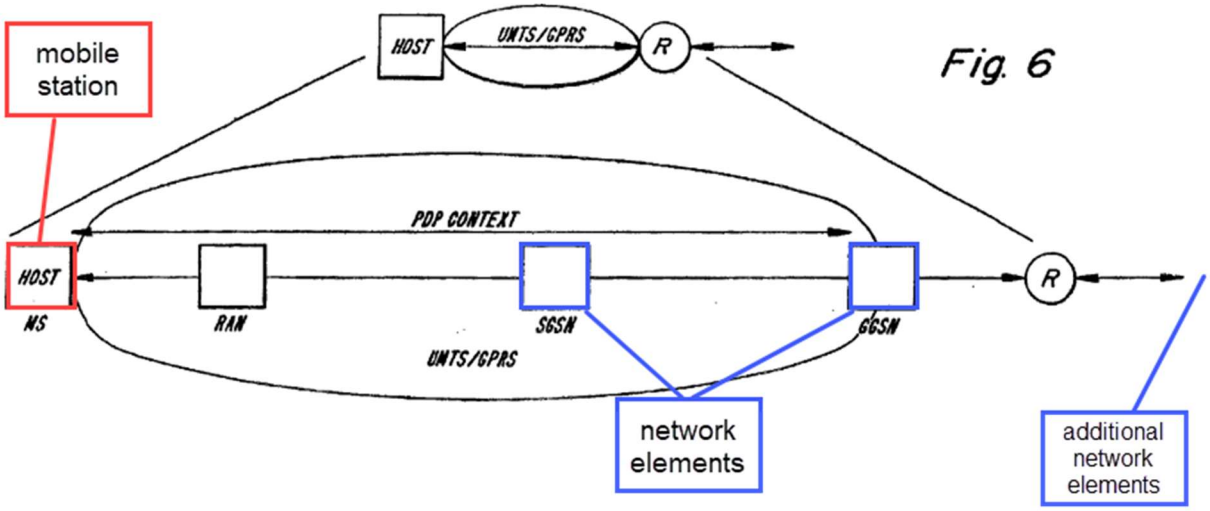
Id., ¶5; *see also id.*, ¶¶12-15 (describing exemplary network architectures for providing end-to-end services), 20-22 (describing GPRS/UMTS network for connecting a mobile station to an external packet switching network such as the Internet), 68 (disclosing the use of multimedia sessions in a "mobile terminal and a remote host coupled to a packet data network" to "transport corresponding ones of the media data streams between the mobile terminal and the access points"); EX1003, ¶81.

The network having a network element configured for managing associated sessions between the network and at least one user equipment: Widegren discloses that the network includes network elements and at least one user equipment.

For example, Widegren discloses "a ***user equipment*** (UE) allowing a user access to network services," which may be a "mobile terminal" or "any type or configuration of user equipment that can communicate over a radio interface or a fixed user to network interface." EX1005, ¶102. Media services may be provided

over the network to ***at least one*** user equipment (*e.g.*, between two users, User-A and User-B, or between a user and an application server). *Id.*, ¶5; *see also id.*, ¶¶110-114 (example involving multimedia session between two user equipments, UE-A and UE-B); EX1003, ¶¶82-83.

Widegren also discloses a wide variety of "***network elements***," including "subnets and IP routers" in the IP network that "support mechanisms to control the quality of service delivered to [] packets," EX1005, ¶9, and other "network elements" in a mobile network (*e.g.*, a "GPRS/UMTS network") that connect a "Mobile Station" to "an external packet switch network … like the Internet," *id.*, ¶20. For example, Figure 6, reproduced below, illustrates network elements in a GPRS/UMTS network between a mobile station and an external packet switching network. *Id.*, ¶20. The network may also include a "Multimedia System 16" that may be "an integral part of the Packet Data Network." *Id.*, ¶104; EX1003, ¶84.



Widegren's network elements are ***configured for managing associated sessions*** between the network and the UEs. For example, as illustrated in Figure 19 (reproduced below), the multimedia system is configured to "correlate each multimedia flow and its corresponding quality of service requirements with the ***session*** to establish necessary admission and policy enforcement rules for the session," and to provide the rules to "the Access Network Bearer Control block … which performs admission and policy enforcement operations for the session."

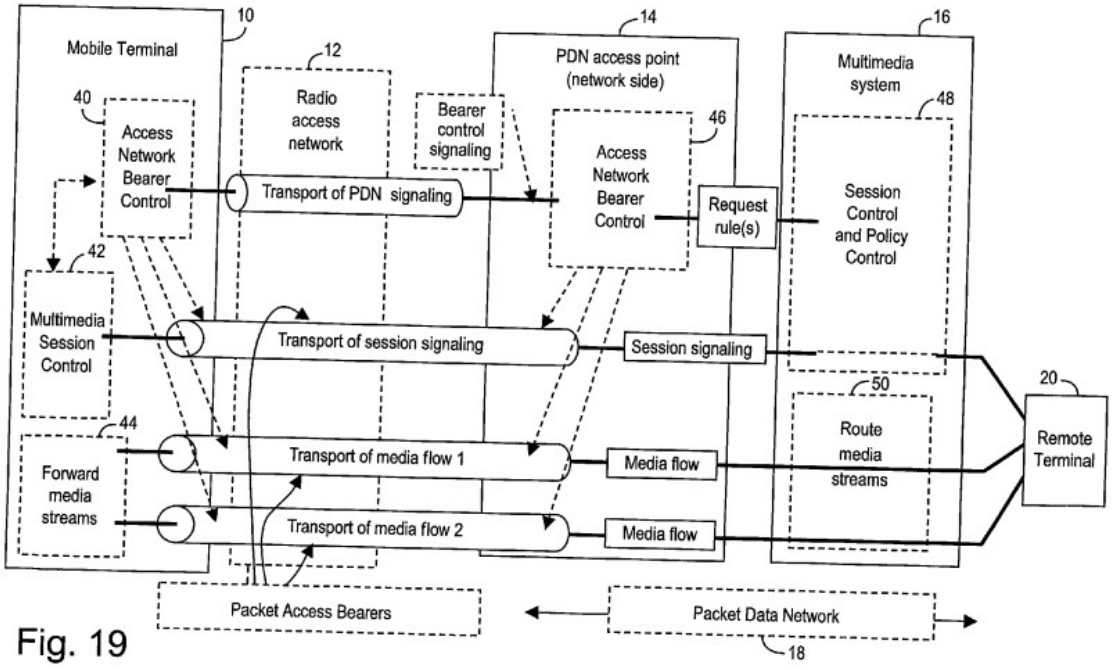


Fig. 19

Id., ¶107; *see also id.*, ¶¶109-118, Figs. 21-22 (example illustrating the IP multimedia subsystem (IMSS) in a GPRS/UMTS network managing associated media streams in a multimedia session), ¶¶185-194, Figs. 24-26 (additional

examples showing more granular signaling between UE and network elements); EX1003, ¶85.

(b) 1a: providing a composition session identifier for associating sessions in the network;

Widegren discloses a "session identifier," sometimes also referred to as an "authorization token" (***composition session identifier***) that "is determined for [a] multimedia session." EX1005, ¶185; *see also id.*, ¶¶71, 111. As described in Limitation 1pre, Widegren's multimedia sessions are used to ***associate*** multiple media streams (***associated sessions***) over the ***network***. For example, the session identifier is included in "media binding information" that "associates each media data stream in the session to one of the media packet access bearers and is used to provide session-based control of each of the media packet access bearers."[4] *Id.*, ¶¶68, 71, 120; EX1003, ¶86.

The "multimedia session" (***composition session***) corresponding to Widegren's "session identifier" is ***a separate signaling session for managing the associated sessions that is initiated using a different signaling session than the associated sessions***. For example, Widegren discloses that "session signaling" is

[4] A "bearer" is "a logical connection between two entities through one or more interfaces, networks, gateways, etc., and usually corresponds to a data stream." *Id.*, ¶18.

used to initiate the "multimedia session," but "[a] plurality of packet access bearers" is separately "established between the mobile terminal and the access point to transport corresponding ones of the media data streams between the mobile terminal and the access points." EX1005, ¶68; *see also id.*, ¶106, Fig. 19 (multimedia session is initiated using "session packet access bearer" and "each of the plural media data streams are established" using separate "[m]edia packet access bearers"). In other words, the session signaling used to initiate the multimedia session that manages the associated media streams is separate and different from the signaling used to establish the packet access bearers for each media stream. EX1003, ¶87. For example, as shown in Figure 19 (reproduced and annotated below), each media flow (***associated stream***) and its corresponding transport (in orange) is separate from the session signaling (***composition session***) and its corresponding transport (in yellow).

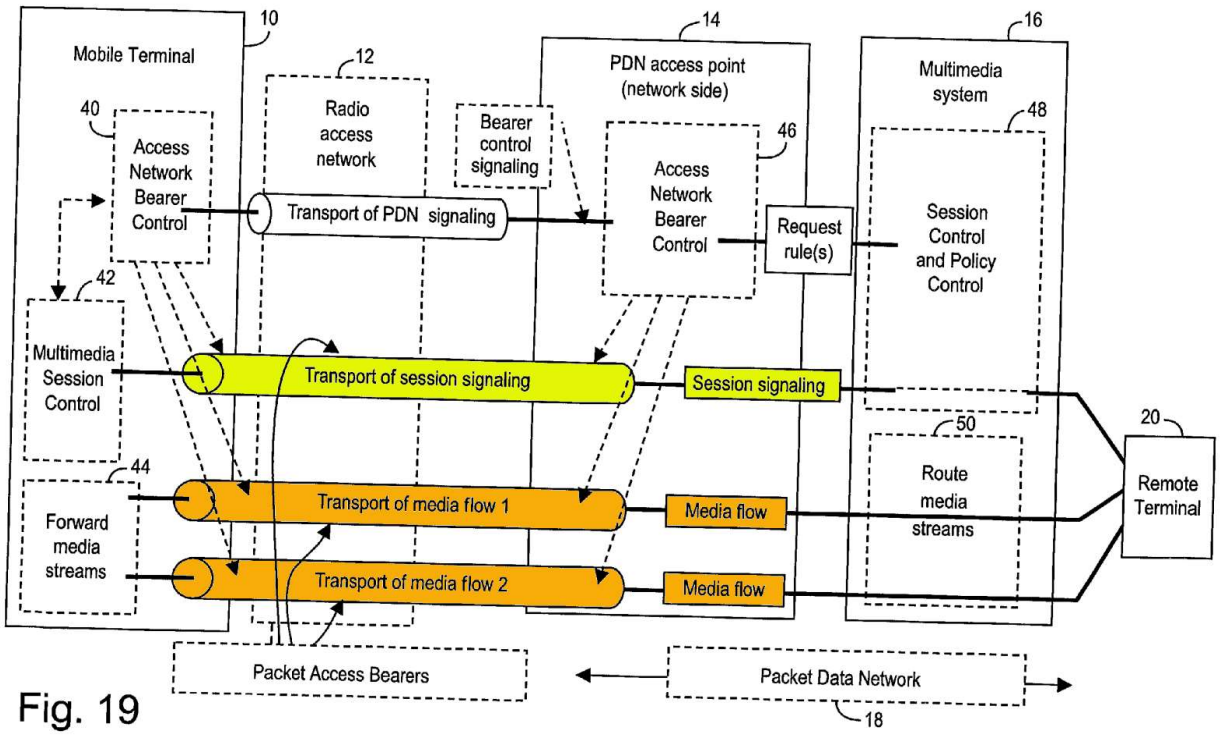


Fig. 19

In addition, Widegren discloses that an entirely different protocol may be used to initiate the media streams (***associated sessions***) as compared to the multimedia session (***composition session***). For example, "RSVP" ("Resource reSerVation Protocol") "is used by a host (e.g., User A's computer) to request specific service from the network for particular application data streams or flows" (*i.e.*, to initiate a media stream). EX1005, ¶11. The "session signaling" for the multimedia session, by contrast, "may employ … session initiation protocol (SIP) with a message portion that uses session description protocol (SDP)." *Id.*, ¶70. The SDP message describes each media stream to be included in the session. *Id.*, ¶63. The '669 patent describes the identical protocols, SIP and SDP, for establishing composition sessions comprising a plurality of associated sessions. *See, e.g.*, EX1001, 7:39-44 ("The

IPTV system uses the ***Session Initiation Protocol (SIP)*** to set up and control sessions between user terminals or user terminals and the application servers …. The ***Session Description Protocol (SDP) carried by SIP signaling*** is used to describe and negotiate the media components in the session."), 9:40-10:13 (example of initiating a composition session "using the SIP protocol" with a "Broadcast (BC) Service" stream identified in the SDP message); EX1003, ¶88.

(c) 1b: after providing the composition session identifier, exchanging the composition session identifier between a user equipment and the network element a first time;

Widegren discloses that the session identifier/authorization token (***composition session identifier***) is sent (*i.e.*, ***exchanged***) both ***from the network element to the UEs***, and ***from the UEs to the network element***. The '669 patent explains that "[t]he sending of such composition session identifier ***in either direction*** may be referred to as an 'exchange'." Ex. 1001, 3:18-20.

For example, as part of establishing a multimedia session, a Policy Control Function (PCF) block, which is part of the multimedia system (a ***network element***), may "generate[] an authorization 'token' for the session (session identifier)," and ***after the composition session identifier is provided***, "send[] [*i.e.*, ***exchange***] it to" one or more user equipments, *e.g.*, two user equipments UE-A and UE-B. EX1005, ¶111, Fig. 22; *see also id.*, ¶¶120, 133, 164, 186, 193 (examples describing how the session identifier is generated and distributed to "SIP level entities" including the

mobile terminal (UE)). In addition, Widegren discloses that the session identifier may be generated "locally" (*i.e.*, a different session identifier for each network element in a particular session) or "globally" or "remotely" (*i.e.*, the same session identifier for all network elements in a particular session). *Id.*, ¶122. In other words, if a global session identifier is used, then the same composition session identifier would be sent (*i.e.*, ***exchanged***) to all of the UEs in a particular multimedia session. EX1003, ¶XX. Thus, when two or more UEs are part of the session (*e.g.*, as illustrated in Figure 26), then the session identifier would be sent ***from the network elements*** (*e.g.*, the PCF block of the multimedia system) ***to the UEs*** at least two times (*i.e.*, once for each UE in the session). *Id.*; EX1005, Fig. 26 (annotated below). EX1003, ¶¶ 89-90. Any of these exchanges could be the ***first exchange***.

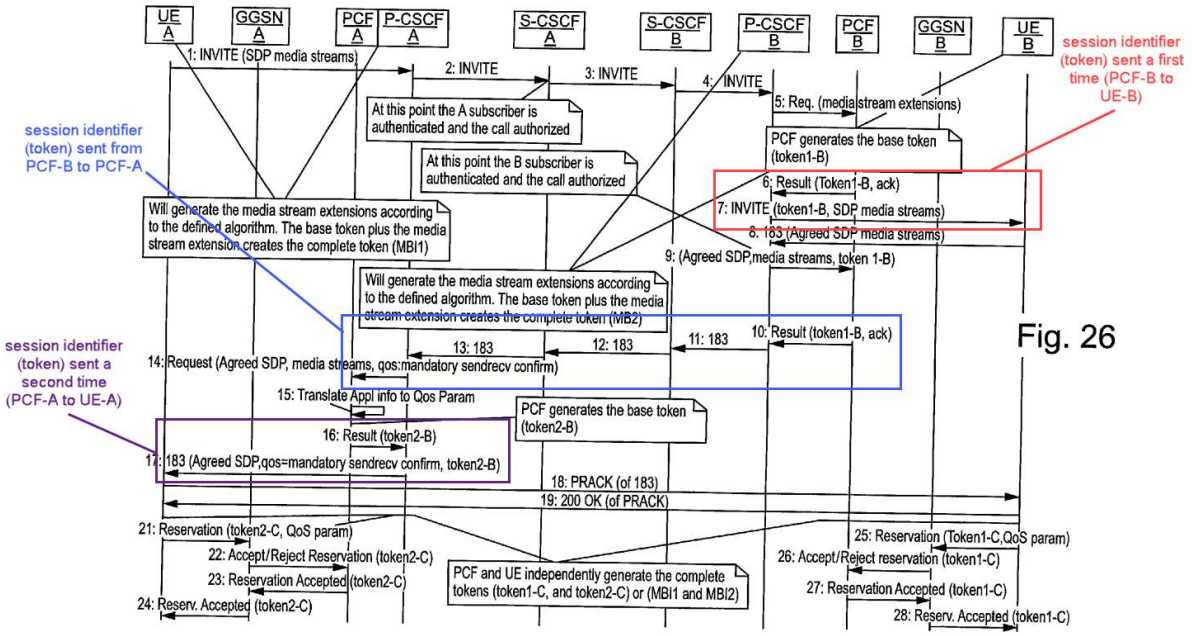


Fig. 26

In addition, ***after the composition session identifier is provided*** to the UEs (*e.g.*, mobile terminals), each UE "generates media binding information (MBI) for each media data stream in the session," *i.e.*, each ***associated session***. EX1005, ¶112. As discussed below, the purpose of the MBI is to set up the respective media stream for managing by the multimedia system. The MBI includes the ***composition session identifier***, specifically by "using a base token corresponding to the session identifie[r] or authorization token and combin[ing] it with media stream-specific parameters to generate the MBI to explicitly identify the individual media stream." *Id.*, ¶120; *see also id.*, ¶¶108 ("The mobile terminal determines media binding information specific to each media flow in the session."), 133, 164, 184, 186, 194 (examples describing generating the MBI using the composition session identifier). In other words, the MBI for each media stream includes the composition session identifier. EX1003, ¶XX. The MBI for each media stream is sent from the mobile terminal (UE) to one or more network elements to set up the packet access bearer for each media stream in the session, and, in the case of GPRS networks, for GPRS quality of service reservation procedures. EX1005, ¶108 ("The media binding information is included in packet access bearer setup signaling for each media flow packet access bearer established for the session between the mobile terminal 10 and the access point 14), Fig. 20 (showing MBI exchanged between the Mobile Terminal and PDN Access Point), ¶194 ("The complete local tokens are employed in the

GPRS quality of service reservation procedures (PDP context activation/creation) shown in signals 21-28 binding the media streams to their corresponding GPRS bearers."), Fig. 26 (reproduced and annotated below). Thus, each UE sends (*i.e.*, ***exchanges***) the ***composition session identifier to the network elements*** multiple times, once for each media stream. EX1003, ¶91. Any of these exchanges could be the ***first exchange***.

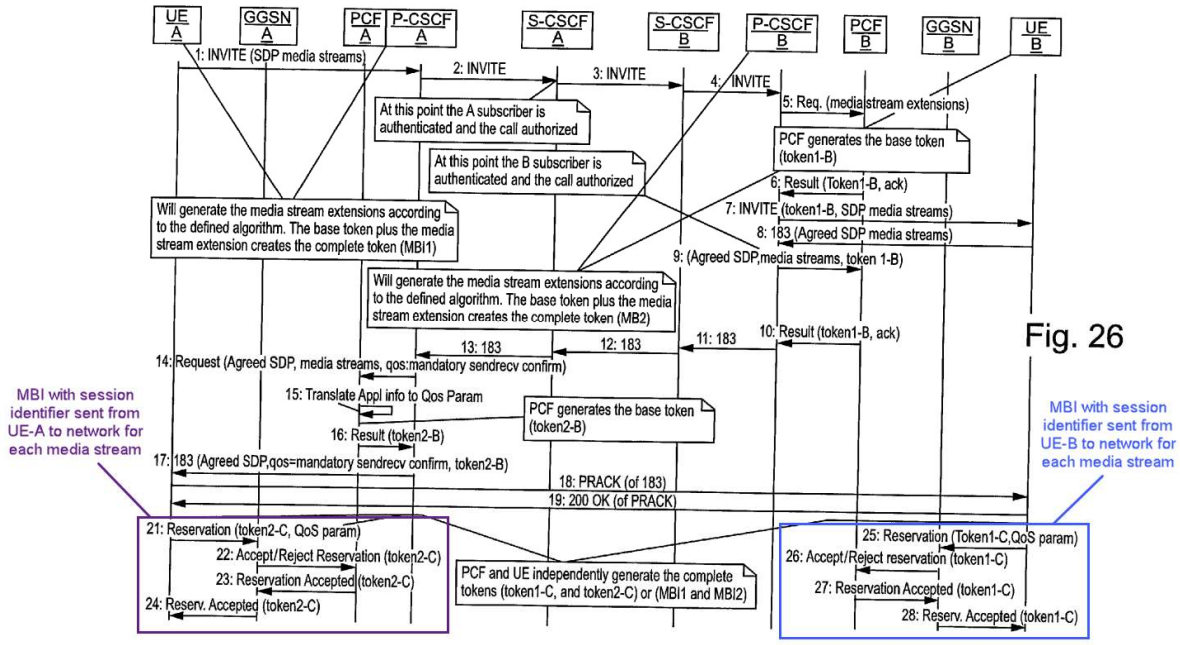


Fig. 26

(d) 1c: associating two or more sessions with the composition session identifier by exchanging the composition session identifier at least a second time, wherein exchanging the composition session identifier at least a second time comprises the network element exchanging the composition session identifier with the user equipment;

Widegren discloses associating two or more media streams (***associated sessions***) with a multimedia session and its session identifier/authorization token

(***composition session identifier***). For example, Widegren discloses that a multimedia session includes "a plurality of media data streams." EX1005, ¶107. In the example shown in Figure 19 (reproduced below), two media streams (orange) are associated with the multimedia session (yellow).

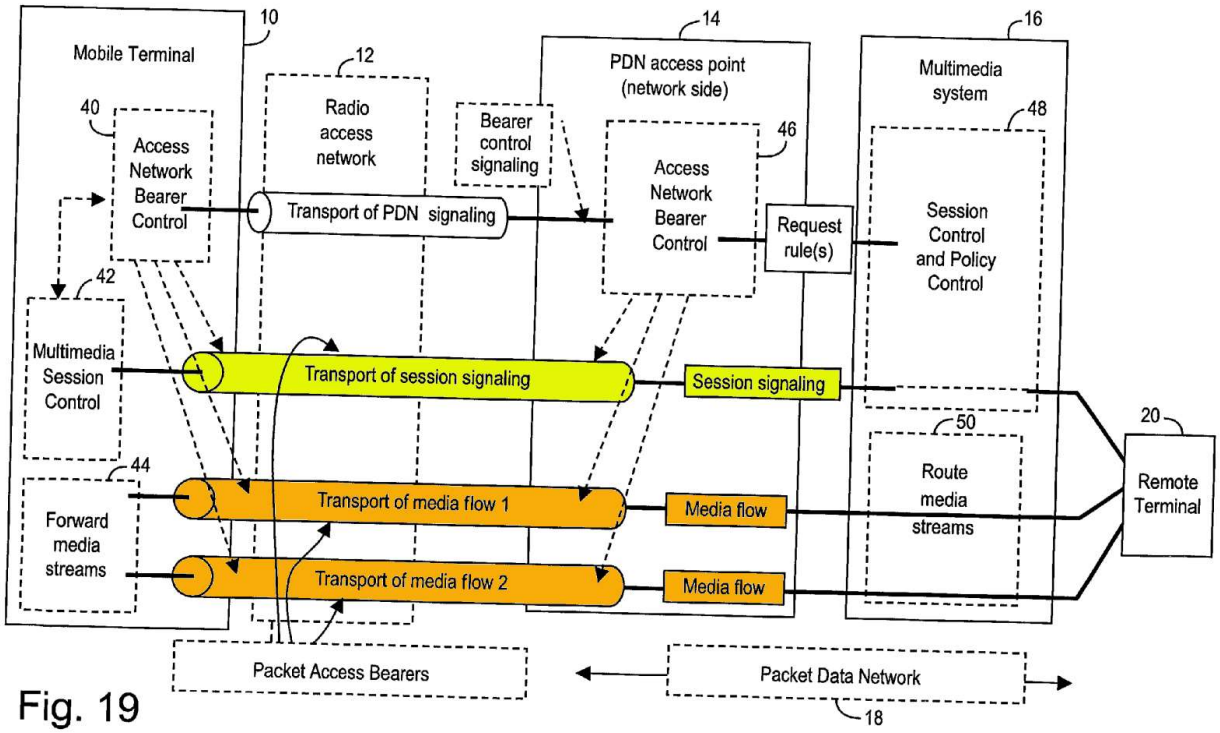


Fig. 19

Widegren further discloses that the media streams are associated with the multimedia session by ***exchanging the session identifier between the network elements and the user equipment at least two times***, as described in Limitation 1b. Specifically, the session identifier is sent from the PCF (***network element***) to a ***user equipment*** at least a first time as part of the session initiation process. EX1005, ¶¶111, 120, 133, 164, 186, 193, Figs. 24, 26. For each of the UE's media streams, the UE sends (*i.e.* ***exchanges***) to the PCF an MBI containing the session identifier

as a reservation signal that ***associates*** that media stream with the multimedia session—each of these exchanges from UE to PCF could be the claimed ***first or second exchange***. *Id.*, ¶¶112 ("One MBI may be included per PDP context…."), 186 (describing generating the MBI for each media stream by combining the "session ID/authorization token … with each media stream identifier"), 194 ("The complete local tokens [corresponding to the media binding information] are employed in the GPRS quality of service reservation procedures (PDP context activation/creation) shown in signals 21-28 binding the media streams to their corresponding GPRS bearers."), 67 ("PDP context activation … link[s] [*i.e.*, ***associates***] each of plural media PDP contexts/data streams to a multimedia session"); *see also id.*, ¶¶108, 120, 133, 164, 184, Fig. 26; EX1003, ¶¶92-93.

(e) 1d: initiating establishment of a composition session, the composition session being a signaling session for facilitating management of the two or more sessions and exchanging the composition session identifier between the user equipment and the network element as part of said establishment, the composition session being different from the two or more sessions; and

Initiating establishment of a composition session, the composition session being a signaling session for facilitating management of the two or more sessions: Widegren discloses "setting up and orchestrating" (***establishing***) a "multimedia session" (***composition session***) "with plural media data streams" (***associated sessions***). EX1005, ¶68. Widegren's system uses "***session signaling***"

to "***initiate[]***" and manage the multimedia session. *Id.* In particular, Widegren discloses using "session initiation protocol (SIP)" for the session signaling. *Id.*, ¶70; *see also id.*, ¶110 ("The session is ***established*** and ***managed*** using Session Initiation Protocol (SIP)."), 123-184 (example using SIP signaling "to set up a multimedia session"). The '669 patent similarly discloses that its composition sessions are initiated and established using SIP. EX1001, 9:40-52 (describing how a "PSC [composition] session is initiated … using the SIP protocol"); EX1003, ¶94.

Widegren further discloses that the multimedia sessions ***facilitate management*** of the plural media streams. For example, Widegren discloses that its multimedia sessions "permit session level control of" the media streams, including "requesting, reserving, supplying, and enforcing IP level resources needed to support the session." EX1005, ¶67; *see also id.*, ¶72 (discussing "session level monitoring and control … using the media binding information"), 113 ("The media binding information is used by the UE-A, GGSN 96, and the PCF 100 to uniquely identify, monitor, and control the IP media flows and bearers from the session level."), 196 ("The media binding information … enables control of multiple GPRS bearers corresponding to multiple multimedia data streams from the session level."). The '669 patent similarly discloses the use of composition sessions to manage resources (such as bandwidth) collectively for the media streams associated with that session. *See, e.g.*, EX1001, 12:24-54; EX1003, ¶95.

Exchanging the composition session identifier between the user equipment and the network element as part of said establishment: Widegren discloses sending (***exchanging***) the session identifier (***composition session identifier***) from the PCF (***network element***) to each UE when establishing a multimedia session between them. EX1005, ¶111 (describing Fig. 22, which "outlines in flowchart form example procedures for ***establishing a multimedia session*** between UE-A and UE-B," which includes the step of "the Policy Control Function 100 generates an authorization 'token' for the session (session identifier) and ***sends it to UE-A and UE-***B"); *see also* Limitation 1b; EX1003, ¶96.

Widegren also discloses sending the composite session identifier as part of the MBI for each media stream of each UE, from the UE to the PCF, to associate the media streams to the multimedia session. *See* Limitations 1b, 1c; EX1003, ¶97.

The composition session being different from the two or more sessions: As discussed above and depicted in Figure 19, Widegren discloses that the multimedia session (***composition session***) (yellow) is different from the two or more media streams (***associated sessions***) (orange). *See* Limitation 1a; EX1003, ¶98.

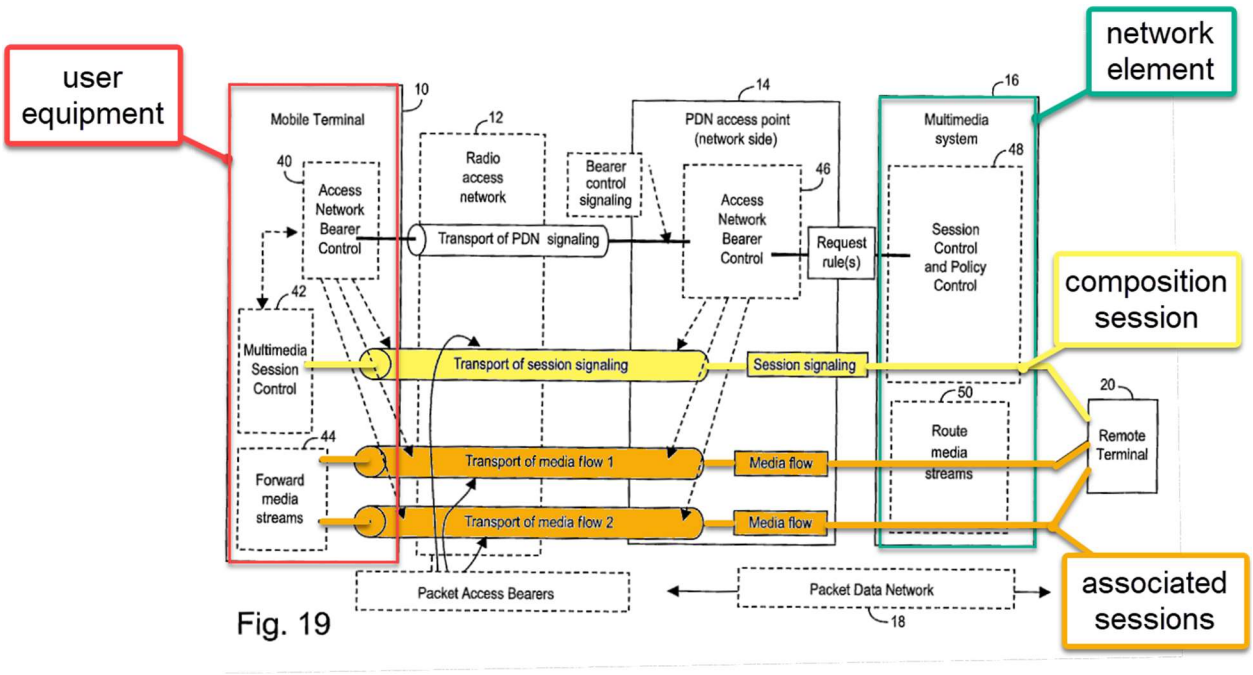


Fig. 19

(f) 1e: modifying the composition session, wherein modifying the composition session comprises using signaling in the composition session to terminate all of the two or more sessions.

Widegren discloses modifying the multimedia session (***composition session***) using ***session signaling***. For example, Widegren discloses "[s]ession level policy controls" and associated "Session Control" and "Policy Control" modules that "utilize[] the ***session signaling*** from the ***Multimedia Session Control block*** … to establish necessary admission and policy enforcement rules for the session." EX1005, ¶¶65, 107. The session signaling may include a "session-related event trigger" that modifies the multimedia session, *e.g.*, by "providing access to resources reserved for traffic accessing a specific IP multimedia service." *Id.*, ¶195; EX1003, ¶99. Widegren further discloses that parameters of a media data stream (*i.e.*

associated session) in a multimedia session may change, and media streams may be added to or removed from the multimedia session, and "the corresponding media binding information" that associates the media streams to the multimedia session "also changes." EX1005, ¶72; EX1003, ¶99.

It would have been obvious to include such session-level controls in Widegren in view of Widegren-793. EX1003, ¶100.

Widegren-793 discloses policy control mechanisms for packet data networks using Session Initiation Protocol (SIP) to provide enhanced data flow and filter control. EX1006, Abstract, 11:33-42. Among other things, Widegren-793 discloses a "session termination" event that "terminates the session directly to the UE" and "results in the termination of the bearer." *Id.*, 14:24-35. Specifically, when the session terminates, the "SIP proxy server … sends a 'session termination' event trigger to the PCF, which informs the PCF to send a gate close command to the GGSN, resulting in the closing of the gate at the GGSN." *Id.*, 14:28-32. In addition, "the SIP proxy server sends information to the PCF that results in the termination of the bearer." *Id.*, 14:32-35. As noted above, the bearer corresponds to a media stream (*i.e.*, ***associated session***). In the combined system, Widegren-793's policy controls would be applied at the session level, as expressly taught by Widegren, such that all of the media streams associated with a multimedia session would be terminated. EX1003, ¶101.

A POSITA would have been motivated to add a "session termination" functionality, as suggested by Widegren-793, to Widegren's system, and would have reasonably expected the combination to succeed, for the reasons provided in Section VII.A.1 above. EX1003, ¶102.

3. Claim 2

(a) 2a: The method according to claim 1, wherein providing the composition identifier comprises: the user equipment generating the composition session identifier; and

Widegren discloses that the session identifier/authorization token (***composition session identifier***) is "received from SIP signaling … at session level/SIP entities in the network and at the mobile terminal." EX1005, ¶186. In one example, the session identifier is "*e.g.*, generated at the PCF," *i.e.*, at a network element. *Id.*; EX1003, ¶103.

It would have been obvious to a POSITA to generate the session identifier (***composition session identifier***) at the user equipment because that is one of a limited number of predictable options as to where the session identifier can be generated (*i.e.*, at a user equipment, at a network element, or at a third party provider), particularly in view of Widegren's disclosure that the session identifier is provided using SIP signaling at ***both*** the network elements ***and*** the mobile terminal. EX1003, ¶104.

The Federal Circuit has recognized that where the prior art suggests limited "predictable choices" for a particular functionality, a POSITA would recognize the options as "a simple design choice," sufficient to establish obviousness. *See CRFD Research, Inc. v. Matal*, 876 F.3d 1330, 1347 (Fed. Cir. 2017). Indeed, the Federal Circuit has expressly applied this reasoning to conclude that the difference between performing a particular function "server-side" or "terminal side" "amounts to a design choice," providing a POSITA with "two predictable choices" and "bar[ring] the patentability of such obvious variations." *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1340 (Fed. Cir. 2020). The same reasoning applies as to whether the session identifier is generated at the user equipment (*e.g.*, a mobile terminal) or at the network element or third party provider (*i.e.*, remotely). EX1003, ¶105. In particular, a POSITA would have understood that there are scenarios where each design choice is more appropriate. *Id.* For example, when multiple different media access bearers are used, it is preferable for the UE to generate the composition sesion identifier. *Id.* Even the '669 patent acknowledges that there are only three options for generating the composition session identifier (*i.e.*, at the user equipment, at a network element, or at a third party provider), and does not suggest any particular difficulty or innovation in selecting one option over the others. EX1001, 3:12-24.

(b) 2b: sending a request for initiating the composition session from the user equipment to the network

element, the request comprising the composition session identifier.

Sending a request for initiating the composition session from the user equipment to the network element: Widegren discloses that the user equipment sends a request to initiate a multimedia session (***composition session***) via the network. EX1005, ¶111 ("UE-A ***requests a multimedia session*** with the SIP UA remote UE-B over the session signaling GPRS bearer via the RAN 90, ***the GPRS network 92, the IP multimedia subsystem 82, the IP backbone network 84, and UE-B's home cellular network 86***."). The request is received at the Policy Control Function of the multimedia system (*i.e.* a ***network element***), which "authorize[s]" the multimedia session and "stores session information for each of the media flows in the session." *Id.*; *see* EX1003, ¶106.

As another example, Widegren illustrates the signaling used to establish a multimedia session in Figure 26 (reproduced and annotated below). EX1005, ¶¶188, 192. Specifically, "[t]he UE-A ***initiates the multimedia session with an INVITE command***, which is sent over a session signaling bearer to the GGSN and forwarded by the GGSN to the multimedia system A" (*i.e.*, a ***network element***). *Id.*, ¶188; EX1003, ¶107.

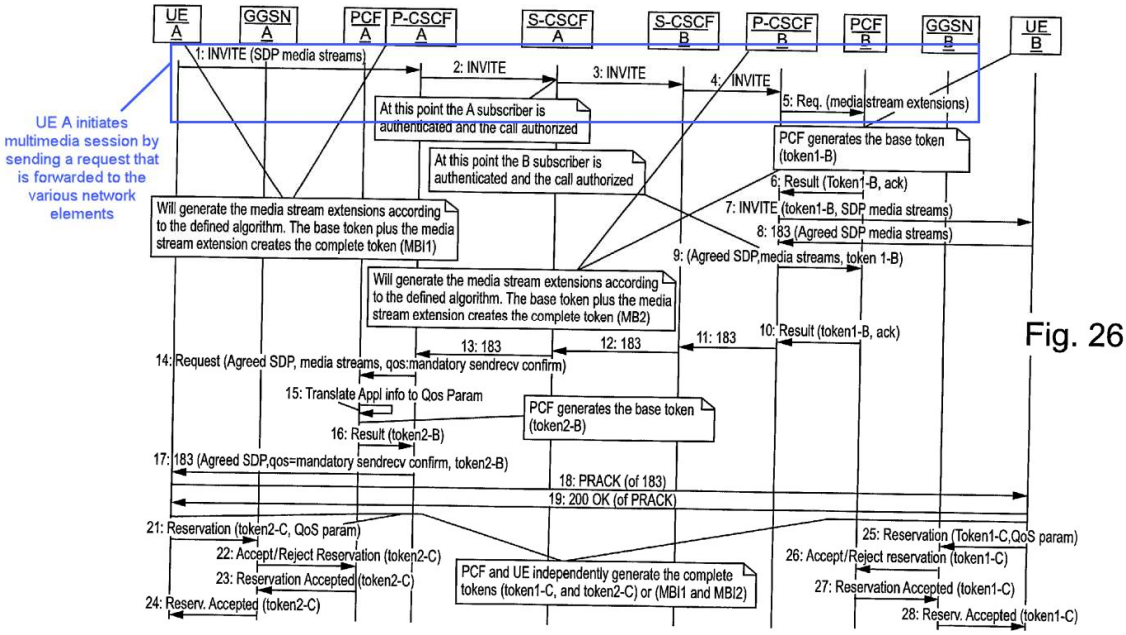


Fig. 26

As discussed above for Limitation 2a, it would have been obvious to a POSITA to generate the session identifier (***composition session identifier***) at the user equipment. EX1003, ¶##. Further, Widegren expressly teaches that the session identifier is "received from SIP signaling … at session level/SIP entities in the network and at the mobile terminal." EX1005, ¶186. A POSITA would have understood that if the session identifier is generated at the user equipment, then the session identifier would have to be provided to the other SIP entities in the network as part of the multimedia session initiation request. EX1003, ¶108. That is necessarily true because subsequent steps of the multimedia session initiation process include, for example, storing the session identifier at the P-CSCF. EX1005, ¶186. In addition, where the multimedia session includes two UEs (*e.g.*, UE-A and UE-B in Fig. 26), the receiving UE must receive the session identifier so that it can

be used to generate media binding information for each media stream. EX1003, ¶108; EX1005, ¶¶193-194.

4. Claim 3: The method according to claim 2, wherein the request for initiating the composition session further comprises one or more session identifiers and, optionally, resource reservation information and/or resource allocation information associated with the one or more sessions identified by the session identifiers.

The request for initiating the composition session further comprises one or more session identifiers: As discussed in Limitation 1a, Widegren discloses that the "session signaling" for initiating the multimedia session (***composition session***) "may employ … session initiation protocol (SIP) with a message portion that uses session description protocol (SDP)." EX1005, ¶70. The SDP message describes each media stream to be included in the session. *Id.*, ¶63. For example, "[t]he SIP INVITE message used to set up a multimedia session includes SDP that describes the media for the session." *Id.*, ¶123. The SDP description would then include a separate description of each media stream (***associated session***) to be associated with the multimedia session, provided as several lines in the SDP description beginning with "m=". *Id.*, ¶¶145-163. Widegren discloses that a "media flow identifier" (***session identifier***), used to uniquely identify each media stream in the MBI, may be determined by "number[ing] the 'm=' lines of the media streams in increasing order." *Id.*, ¶184; *see also id.*, ¶121 ("The media stream identifier may be formed by its position in the SDP messages, for example, by assigning a consecutive number

to the media streams in the SDP message."). The media flow identifiers would thus be included in the SIP INVITE message requesting initiation of the multimedia session, as the ordered sequence of "m=" lines in the SDP. EX1003, ¶109.

Optionally, resource reservation information and/or resource allocation information associated with the one or more sessions identified by the session identifiers: This element is not limiting, as it may only be "optionally" included. Nevertheless, Widegren discloses that the multimedia session initiation request includes at least ***resource allocation information associated with the one or more sessions identified by the session identifiers***. For example, Widegren discloses that the SDP message portion of the request (which, as above, provides the media flow identifiers) "contains sufficient information about the session," including at least resource allocation information such as "bandwidth requirements." EX1005, ¶111; EX1003, ¶110.

5. Claim 4: The method according to claim 1, wherein providing the composition identifier comprises: sending a request for initiating the composition session from the user equipment to the network element; the network element generating the composition session identifier in response to the receipt of the request for initiating the composition session; and the network element sending the composition session identifier to the user equipment.

As discussed above for Limitation 2a, Widegren discloses that the session identifier/authorization token (***composition session identifier***) is "received from SIP

signaling … at session level/SIP entities in the network and at the mobile terminal." EX1005, ¶186.

Widegren expressly discloses examples where the session identifier is provided as recited in claim 4. For example, a ***user equipment*** (*e.g.*, UE-A) may "request[] a multimedia session … in the form of an SIP/SDP message" (*i.e.*, ***send a request for initiating the composition session***). EX1005, ¶111. The request is received by the Proxy-Call State Control Function (P-CSCF) and the Policy Control Function (PCF) of the multimedia system (*i.e.*, ***network element***). *Id.* The PCF then "generates an authorization 'token' for the session (session identifier)" (*i.e.*, ***generates the composition session identifier in response to the receipt of the request***). *Id.* The PCF then "sends [the session identifier] to UE-A and UE-B" (*i.e.*, ***sends the composition session identifier to the user equipment***). *Id.* This process is also illustrated in Fig. 26 (reproduced and annotated below).[5] EX1003, ¶111-12.

[5] As noted above for Limitation 1b, Fig. 26 illustrates an example where the session identifier is generated "locally" at each UE's local network, such that there are different session identifiers used with each UE. However, Widegren discloses that the session identifier may be generated "globally" for all elements in the session, in which case the same session identifier (*i.e.* ***composition session identifier***) would be provided from PCF-B to UE-B, and from PCF-A to UE-A. EX1003, ¶112 n.5.

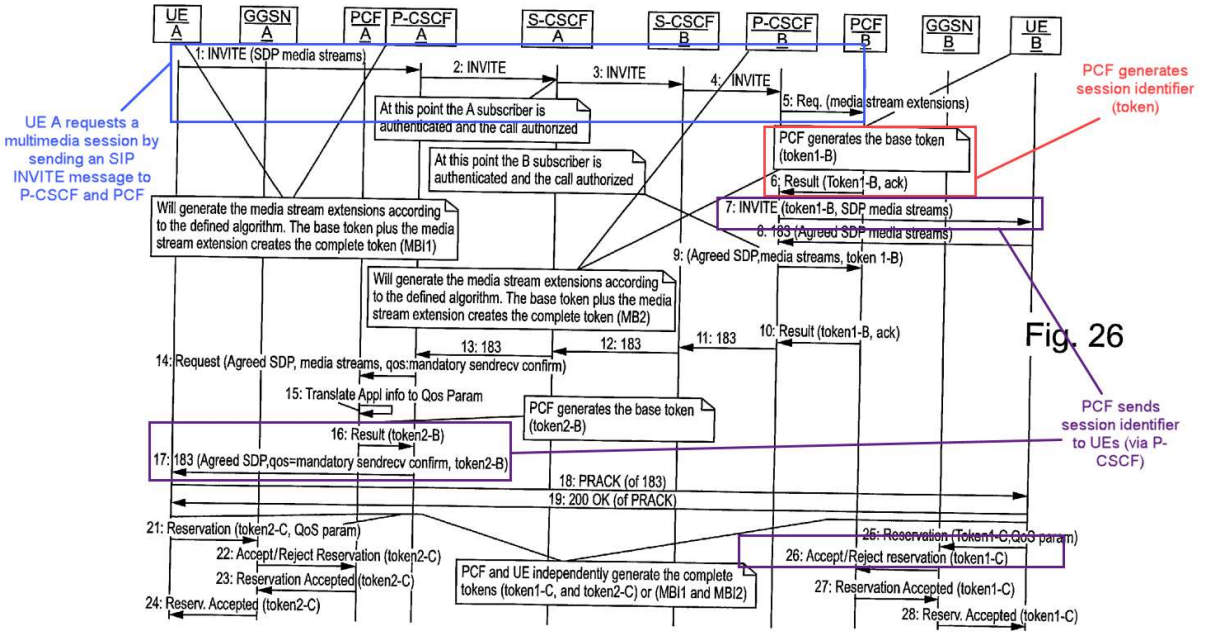


Fig. 26

6. **Claim 5: The method according to claim 4, wherein the request for initiating a composition session further comprises one or more session identifiers and, optionally, resource reservation information and/or resource allocation information associated with the one or more sessions identified by the session identifiers.**

See Claim 3.

7. **Claim 6: The method according to claim 1, wherein the method further comprises: the user equipment initiating the two or more associated sessions by sending two or more session initiation requests for a session to the network element, each request comprising the composition session identifier.**

The user equipment initiating the two or more associated sessions by sending two or more session initiation requests for a session to the network element: Widegren discloses that a multimedia session may have two or more media streams (***associated sessions***). For example, Widegren discloses that a

multimedia session includes "a plurality of media data streams." EX1005, ¶107. In the example shown in Figure 19 (reproduced below), two media streams (orange) are associated with the multimedia session (yellow). EX1003, ¶114.

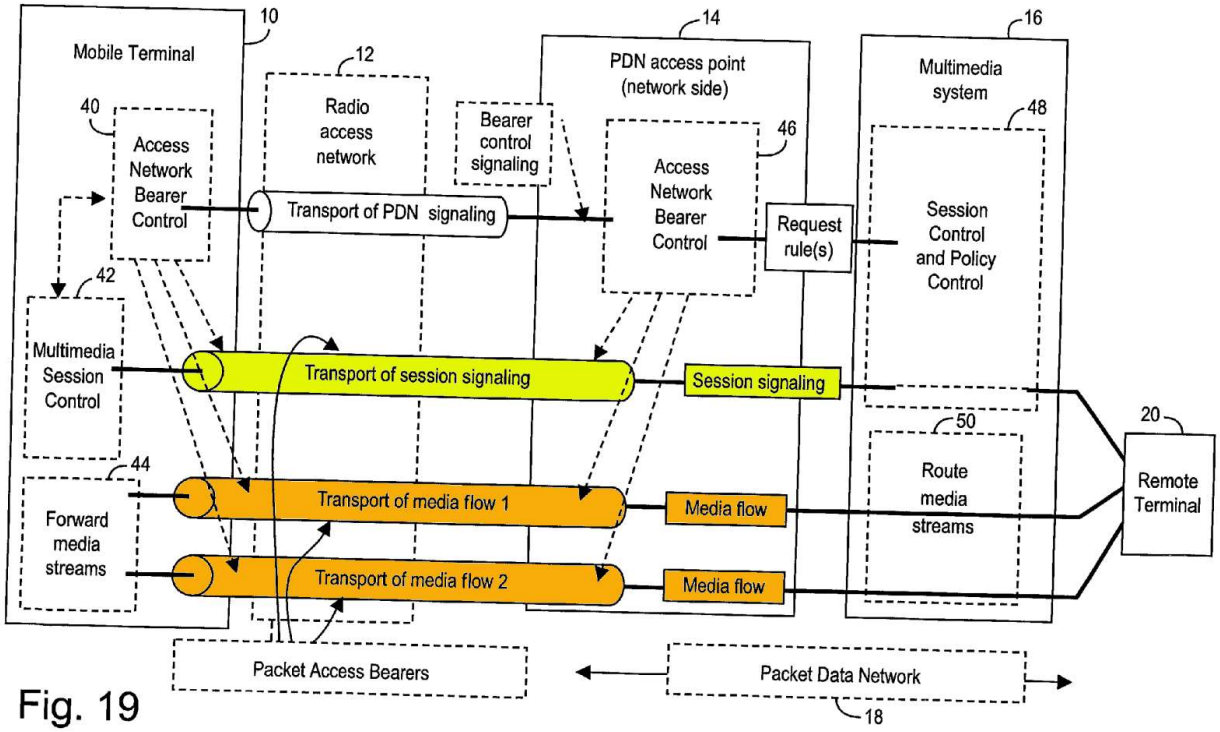


Fig. 19

Widegren further discloses that each of the media streams may be initiated by a separate ***request*** sent from the ***user equipment*** to the GGSN and PCF of the multimedia system (***network element***). For example, as illustrated in Figure 26 (reproduced and annotated below), a "reservation" request is sent from each UE to its corresponding GGSN, and forwarded to the corresponding PCF (signals 21-28), comprising media binding information. EX1005, ¶194. The reservation procedure uses the media binding information to perform "PDP context activation/creation" (***session initiation request***), which initiates each media stream, establishes a

corresponding logical link over the network, and associates it with the multimedia session. *Id.*, ¶¶194 (a "complete local token … which correspond to media binding information" is "employed in the GPRS quality of service reservation procedures," which include "PDP context activation/creation"), 108 ("The media binding information is included in packet access bearer setup signaling for each media flow packet access bearer established for the session between the mobile terminal 10 and the access point 14."), 21 ("PDP attach procedure" is used to "establish a logical link" to a network resource, including establishing a "PDP context … between the mobile host and a GGSN," and establishes an "application flow" over the PDP context), 23 ("network resources are managed on a per PDP context level, which corresponds to one or more user flows/data streams"), 67 ("PDP context activation … link[s] [*i.e.*, ***associates***] each of plural media PDP contexts/data streams to a multimedia session"). "One MBI [corresponding to one media stream] may be included per PDP context." *Id.*, ¶112. Thus, for two or more media streams, ***at least two*** PDP context activation/creation requests will be sent—one for each media stream/MBI. EX1003, ¶115.

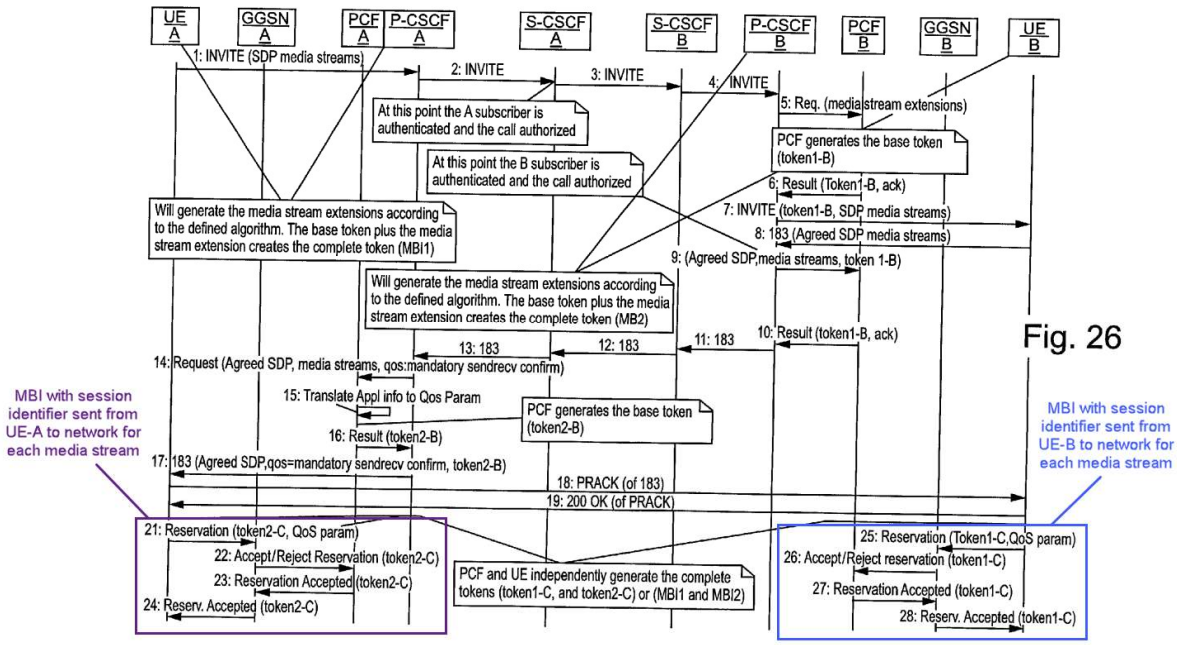


Fig. 26

In addition, as further discussed above for Limitation 1b, Widegren discloses that additional reservation requests (PDP context activation/creation requests) for each media stream will be sent by a second UE to its corresponding GGSN and PCF when two or more UEs are part of the multimedia session. *Id.*, ¶¶67, 112, 194, Fig. 26; EX1003, ¶116.

Each request comprising the composition session identifier: As described in Limitation 1b, the session identifier/authorization token (***composition session identifier***) is included in the MBI used for reservation signaling (PDP context activation/creation requests). EX1005, ¶¶186 (describing generating the MBI for each media stream by combining the "session ID/authorization token … with each media stream identifier"), 194 ("The complete local tokens [corresponding to the media binding information] are employed in the GPRS quality of service reservation

procedures (PDP context activation/creation) shown in signals 21-28 binding the media streams to their corresponding GPRS bearers."); *see also id.*, ¶¶108, 120, 133, 164, 184, Fig. 26. Thus, each PDP context activation/creation request, which includes the MBI, will comprise the session identifier. EX1003, ¶117.

8. Claim 8: The method according to claim 1, wherein the method further comprises: the network element initiating the two or more associated sessions by sending two or more requests for a session to the user equipment, each request comprising the composition session identifier.

As described for Claim 6, Widegren discloses initiating two or more media streams (***associated sessions***) by sending two or more PDP context activation/creation requests (***requests for a session***), each of which comprises the session identifier/authorization token (***composition session identifier***). EX1003, ¶118.

It would have been obvious to a POSITA to generate the requests at the ***network element*** and send them to the ***user equipment*** because that is one of two predictable options for initiating a session (*i.e.*, network element sends a request to user equipment, or user equipment sends a request to the network element). EX1003, ¶119. As discussed above for Limitation 2a, the Federal Circuit has recognized that where the prior art suggests limited "predictable choices" for a particular functionality, a POSITA would recognize the options as "a simple design choice," sufficient to establish obviousness, and has applied this to find that

performing a function at the "server-side" or "terminal side" are two obvious variations. *CRFD*, 876 F.3d at 1347; *Uber*, 957 F.3d at 1340.

9. Claim 14: A non-transitory computer readable medium having stored thereon software instructions that, if executed by a user equipment or a network element, cause the user equipment or the network element to perform operations comprising the method according to claim 1.

Widegren discloses that all of its disclosed functions "may be implemented using … software functioning in conjunction with a suitably programmed digital microprocessor or general purpose computer." EX1005, ¶101. A POSITA would have thus understood that the method recited in claim 1 may be implemented as software instructions executed by a user equipment or network element. EX1003, ¶120.

10. Claim 15

(a) 15pre: A system for managing associated sessions in a network, the system comprising:

See Limitation 1pre (discussion of "a method for managing associated sessions in a network").

(b) 15a: a network element; and

See Limitation 1pre (discussion of "the network having a network element").

(c) 15b: a user equipment,

See Limitation 1pre (discussion of "the network having … at least one user equipment").

(d) 15c(i): wherein the network element is configured to (i) manage sessions between the network element and the user equipment,

See Limitation 1pre (discussion of "configured for managing associated sessions").

(e) 15c(ii): (ii) exchange a composition session identifier with the user equipment a first time, and

See Limitation 1b.

(f) 15c(iii): (iii) associate two or more sessions with the composition session identifier by exchanging the composition session identifier at least a second time, wherein exchanging the composition session identifier at least a second time comprises the network element exchanging the composition session identifier with either the user equipment or a second user equipment different from the user equipment,

See Limitation 1c.

(g) 15d(i): wherein the user equipment is configured to (i) provide the composition session identifier and

See Limitation 1a.

(h) 15d(ii): (ii) after providing the composition identifier, exchange the composition session identifier with the network element, and

See Limitation 1b.

(i) 15e: at least one of the network element or the user equipment is configured to initiate a composition session, the composition session being a signaling session for facilitating management of the two or more sessions and exchanging the composition session identifier between the user equipment and the

network element, the composition session being different from the two or more associated sessions, and

See Limitation 1d.

(j) 15f: wherein the network element is configured to modify the composition session using signaling in the composition session to terminate all of the two or more sessions.

See Limitation 1e.

11. Claim 16

(a) 16a: The user equipment of claim 15, wherein the user equipment comprises: an ID generator for generating the composition session identifier; and

As described in Limitation 2a, it would have been obvious to a POSITA to generate Widegren's session identifier (***composition session identifier***) at the user equipment. A POSITA would have understood that in the modified system, the user equipment would necessarily include software or hardware for generating the session identifier (*i.e.*, an ***ID generator***). EX1003, ¶131. For example, Widegren discloses that the UE (***user equipment***) may "generate a media stream identifier using a predetermined algorithm or procedure." EX1005, ¶120. A POSITA would have understood that a similar "predetermined algorithm or procedure" would be utilized to generate a session identifier in the modified system. EX1003, ¶131. Indeed, the '669 patent provides no detail or limitation regarding the structure of the

ID generator, except that it used to generate a composition session identifier. *See* EX1001, 6:10-34.

(b) 16b: a multimedia client configured to (i) receive the composition session identifier from the ID generator, (ii) exchange the composition session identifier with the network element, (iii) initiate one or more multimedia sessions with the network element, and (iv) exchange the composition session identifier with the network element during set up of the multimedia sessions.

A multimedia client: The '669 patent provides no detail or limitation regarding the structure of the multimedia client, except that it is used to perform the claimed functions (*i.e.*, receiving the composition session identifier, exchanging the composition session identifier with the network element, initiating one or more multimedia sessions, and exchanging the composition session identifier with the network element during set up of the multimedia sessions). *See* EX1001, 6:10-21. As detailed below, Widegren discloses or renders obvious a user equipment that performs each of the recited functions. Further, Widegren expressly discloses a mobile terminal (***user equipment***) that includes a "Multimedia Session Control" block (***multimedia client***) that "correlates each multimedia flow and its corresponding quality of service requirements with the session to establish necessary admission and policy enforcement rules for the session." EX1005, ¶107, Fig. 19. A POSITA would have understood that the steps recited in Limitation 16b are performed by Widegren's Multimedia Session Control block. EX1003, ¶132.

Receive the composition session identifier from the ID generator: Widegren discloses that the Multimedia Session Control block engages in "Session signaling" with the "Multimedia system." EX1005, Fig. 19. Widegren further discloses that "session signaling" is used to initiate a "multimedia session with plural media data streams … between the mobile terminal and remote host." *Id.*, ¶68. "The session identifier [***composition session identifier***] is carried in the session signaling," and thus would be received by the Multimedia Session Control. *Id.*, ¶71; EX1003, ¶133.

As discussed for Limitation 16a, it would have been obvious to a POSITA to generate the session identifier at the user equipment using an ID generator. EX1003, ¶134. A POSITA would have understood that in the modified system, the Multimedia Session Control block would still receive the session identifier, because the session identifier is used in session signaling to establish the multimedia session and associated media streams. EX1003, ¶134; *see also* Limitation 1d.

Exchange the composition session identifier with the network element: As discussed for Limitation 2b, Widegren discloses that session signaling between the user equipment and the multimedia system (***network element***) is used to establish a multimedia session. EX1005, ¶¶111 ("UE-A ***requests a multimedia session*** with the SIP UA remote UE-B over the session signaling GPRS bearer via the RAN 90, ***the GPRS network 92, the IP multimedia subsystem 82, the IP backbone network***

84, and UE-B's home cellular network 86."), 188 ("The UE-A ***initiates the multimedia session with an INVITE command***, which is sent over a session signaling bearer to the GGSN and forwarded by the GGSN to the multimedia system."), 192, Fig. 26. EX1003, ¶135.

As further discussed in Limitation 2b, it would have been obvious to a POSITA to generate the session identifier (***composition session identifier***) at the user equipment. EX1003, ¶##. A POSITA would have understood that if the session identifier is generated at the user equipment, then the session identifier would have to be provided to (***exchanged with***) the other SIP entities in the network as part of the multimedia session initiation request. EX1003, ¶136; *see also* EX1005, ¶¶186, 193-194.

Initiate one or more multimedia sessions with the network element: As discussed in Claim 6, Widegreen discloses that the user equipment initiates media streams (***multimedia sessions***) with the multimedia system, and in particular, the PCF (***network element***). *See* Claim 6; EX1005, ¶¶21, 23, 67, 108, 112, 194, Fig. 26. A POSITA would have understood that the Multimedia Session Control initiates the media streams because it "correlates each multimedia flow and its corresponding quality of service requirements with the session," which is performed as part of the PDP context activation/creation request for initiating a media stream. EX1005, ¶67

("PDP context activation … link[s] each of plural media PDP contexts/data streams to a multimedia session"); EX1003, ¶137.

Exchange the composition session identifier with the network element during set up of the multimedia sessions: As described for Claim 6, the session identifier/authorization token (***composition session identifier***) is sent to (***exchanged with***) the GGSN and PCF (***network elements***), included in the MBI, which is provided as part of reservation signaling (PDP context activation/creation requests) that sets up each media stream (***multimedia session***). *See* Claim 6; EX1005, ¶¶186, 194, Fig. 26; EX1003, ¶138. As noted in the preceding paragraph, the Multimedia Session Control performs this process.

12. Claim 17: The user equipment according to claim 16, wherein the user equipment is configured to initiate the composition session.

See Limitation 2b.

13. Claim 18

(a) 18a: The network element of claim 15, wherein the network element comprises: a session manager configured to exchange the composition session identifier with the user equipment and to set up and modify multimedia sessions; and

Widegren discloses a multimedia system (*e.g.*, an IP Multimedia Subsystem) (***network element***) that includes a Policy Control Function (PCF) block (***session manager***). *E.g.*, EX1005, ¶110, Fig 21. The PCF is configured to generate the session identifier/authorization token (***composition session identifier***) and send

(***exchange***) it to the user equipment. *See* Limitation 1b; EX1005, ¶111, 120, 133, 164, 186, 193, Fig. 22, Fig. 26. The PCF is also configured to set up and modify multimedia sessions in response to PDP context activation/creation requests and PDP context modification messages. *See* Claim 6; EX1005, ¶¶21, 23, 67, 108, 194, Fig. 26; *see also* EX1005, ¶¶112-113 (separately discussing PDP context modification messages); EX1003, ¶140.

(b) 18b: storage configured to store composition session information, the composition session information comprising information regarding composition session identifiers and the two or more associated sessions.

Widegren discloses that the multimedia system (***network element***) stores "the session identifier" and "session-related data" (***information regarding composition session identifiers***), and "media-related information" (***information regarding the two or more associated sessions***) for requested sessions. EX1005, ¶108, Fig. 20; *see also id.* ¶¶188 (P-CSCF stores "a session ID" and "SDP information relating to each of the medias being requested for the session"). A POSITA would have understood that Widegren's multimedia system must include storage in order to store this information. EX1003, ¶141.

14. Claim 19: The network element according to claim 18, further configured for at least one of initiating, terminating or modifying the composition session.

Widegren discloses modifying the composition session. *See* Limitation 1e. In addition, Widegren in view of Widegren-793 renders obvious terminating the composition session. *See* Limitation 1e.

15. Claim 20: The network element according to claim 18, the network element further comprising: an ID generator configured to generate the composition session identifier.

See Claim 4.

16. Claim 21

(a) 21pre-21d:

See identical Limitations 1pre-1d, respectively.

(b) 21e: modifying, using signaling in the composition session, all of the two or more sessions.

See Limitation 1e.

B. <u>Ground 2:</u> Claims 7, 9, are Rendered Obvious by Widegren in view of Widegren-793, in Further View of ETSI TS 183 063

As discussed in Ground 1 above, Widegren discloses a multimedia session comprising a plurality of associated media streams for use in an IP Multimedia Subsystem, and in view of Widegren-793, discloses every limitation of the challenged independent claims. ETSI TS 183 063 discloses an IP television (IPTV) service and associated protocols and enhancements, based on an IMS architecture,

which supports services such as broadcast, content on-demand, and network-side personal video recorder services.

As set forth below, a POSITA would have been motivated to combine Widegren's multimedia sessions and session-level controls with the particular IPTV services disclosed by ETSI TS 183 063, rendering claims 7 and 9 obvious. EX1003, ¶¶146-47.

1. Motivation to Combine

A POSITA would have been motivated to combine Widegren/Widegren-793's multimedia sessions with ETSI TS 183 063's Internet Protocol television ("IPTV") services based on an IMS architecture. EX1003, ¶¶148-53. IPTV is a service that delivers television broadcasts over IP networks.

First, Widegren, Widegren-793, and ETSI TS 183 063 all build on the same underlying technology, *i.e.*, IP Multimedia Subsystems using IP application signaling, namely, Session Initiation Protocol. EX1005, ¶63; EX1006, 9:18-24; EX1008, 10, 14, 17-37. *See* EX1003, ¶151.

Second, Widegren expressly teaches that its invention may be used for video applications, such as "streaming services (audio or video)," and would thus be particularly suitable for implementing IPTV functionality as disclosed by ETSI TS 183 063. EX1005, ¶4; *see also id.*, ¶5 (describing communication with an "application server 103, which may be configured as a video server"); EX1003,

¶149. Based on this teaching, a POSITA would be motivated to consider how an IPTV service could be implemented on top of Widegren system and services. As such, a POSITA would be motivated to look at references that provide an architecture to support, for example, IPTV services. One such reference a POSITA could turn to would be ETSI TS 183-063. A POSITA would have been particularly motivated to consider ETSI TS 183 063 in combination given its use of IMS and SIP, for example. *Id.*

Third, ETSI TS 183 063 expressly discloses building IPTV services, including broadcast, contend on-demand, and network personal video services, on an IMS architecture, *e.g.*, the IMS architecture disclosed by Widegren and Widegren-793. EX1008, 10, 14. A POSITA would thus be motivated to apply ETSI TS 183 063's teachings to provide additional functionality in the form of IPTV services in a standardized IMS system such as Widegren's. EX1003, ¶150. A POSITA would be further motivated by consumer demand for IPTV services, which are often cheaper than other television services (such as satellite or cable). *Id.*

A POSITA would have reasonably expected the combination to succeed. EX1003, ¶152. As the '669 patent, Widegren, Widegren-793, and ETSI TS 183 063 all recognize, IP Multimedia Subsystems and Session Initiation Protocol were well known, standardized technologies well before the date of the '669 patent, and would have been familiar to a POSITA. Further, ETSI TS 183 063 expressly contemplates

providing IPTV services using an IMS architecture such as Widegren's. Accordingly, applying and combining techniques using these well-known standardized technologies would have been well within the capabilities of a POSITA, and would have required nothing more than the application of known techniques to improve similar devices in a predictable way. EX1003, ¶152.

Finally, Widegren, Widegren-793, and ETSI TS 183 063 are analogous art to the '669 patent because all four are directed to managing sessions in a network, and in particular, in an IP Multimedia Subsystems using Session Initiation Protocol. EX1001, Abstract, 1:23-29; EX1005, Abstract, ¶63; EX1006, Abstract, 9:18-24; EX1008, 10 (describing "protocols and their possible enhancements to support IPTV services"), 14 (describing "functional architecture" for an "IMS-based IPTV service"), 17-47 (disclosing the use of "the SIP/SDP protocol" to implement "IMS-based IPTV" services). EX1003, ¶153.

2. Claims 7 / 9: The method according to claim [6 / 8], wherein the two or more associated sessions comprise at least one of a broadcast (BC) session associated with a BC identifier (BCServiceID), a content-on-demand (CoD) session associated with a CoD identifier (CoDID), a Targeted Advertisement Insertion (TAI) session associated with a TAI identifier, network personal video content (NPVC) session associated with a NPVR identifier (NPVRContentID), a user generated content (UGC) session associated with a UGC identifier, a Public Switched Telecommunications Network (PSTN) emulation session associated with a PSTN emulation identifier, or a shared content (SC) session associated with a SC identifier.

Widegren discloses that its multimedia sessions may be used in IP networks that support applications such as "real time applications (IP Telephony, video conferencing), streaming services (audio or video), or high quality data services (browsing with unbounded download delays)." EX1005, ¶4; EX1003, ¶154.

It would have been obvious to a POSITA to include the claimed functionality in Widegren's system in view of ETSI TS 183 063. EX1003, ¶¶155. ETSI TS 183 063 discloses "protocols and their possible enhancements to support IPTV services." EX1008, 10. In particular, ETSI TS 183 063's IPTV service is implemented on an IMS architecture. *Id.*, 14; EX1003, ¶155.

ETSI TS 183 063 expressly discloses that the IPTV services may include ***broadcast sessions, content-on-demand sessions, and network personal video sessions***. EX1008, 13-14 (defining abbreviations "BC – BroadCast", "CoD – Content On Demand", and "nPVR – network-side Personal Video Recorder"), 19-

20 (disclosing procedures for "BC session initiation"), 22-23 (disclosing procedures for "COD session initiation"), 31 (disclosing procedures for "NPVR Session"). Each service has an associated ID, including a ***BCServiceId*** for broadcast services, a ***CoDId*** for content on demand services, and an ***NPVRContentId*** for network personal video recording services. *Id.*, 20 (session initiation messaging for broadcast service includes "[a]n a=bc_service:***BCServiceId*** line to indicate the BC service which the UE intends to join first"), 53 (describing "contend identified by a ***CoDId***), 31 (NPVR session procedures require "[t]he user part of the 'Request-URI' parameter shall contain the ***NPVRContentId***"); *see also id.*, 88 (Table D.1, showing data associated with each service type, including BCServiceId for IPTV BC service, CoDId for IPTV COD service, and NPVRContentId for IPTV NPVR service); EX1003, ¶156.

A POSITA would have been motivated to add IPTV services as described by ETSI TS 183 063 to Widegren's IMS architecture, and would have reasonably expected the combination to succeed, for the reasons provided in Section VII.B.1 above. EX1003, ¶157.

C. <u>Ground 3:</u> Claims 13 and 23 are Rendered Obvious by Widegren in view of Widegren-793, and in further view of Astrom

As discussed in Ground 1 above, Widegren discloses a multimedia session comprising a plurality of associated media streams for use in an IP Multimedia Subsystem, and in view of Widegren-793, discloses every limitation of the

independent claims. Astrom discloses an IPTV system built atop an IMS architecture using SIP signaling. Astrom further discloses details regarding the architecture and functionality of IPTV and IMS, including pausing an IPTV broadcast when an incoming call is received at the user equipment. In the combined system, Astrom's IPTV data stream pausing functionality would be applied as a session level control to Widegren's multimedia session to enable selectively pausing data streams of associated sessions.

As set forth below, a POSITA would have been motivated to combine Widegren's multimedia sessions and session-level controls with Astrom's IMS architecture and data stream pausing functionality, rendering claims 13 and 23 obvious.

1. Motivation to Combine

A POSITA would have been motivated to combine Widegren/Widegren-793's multimedia sessions with Astrom's IPTV system and associated IMS architecture. EX1003, ¶¶160-66.

First, Widegren, Widegren-793, and Astrom are all references assigned to Ericsson, and directed to related improvements in IP multimedia services, particularly as part of telecommunication services. For example, both Widegren and Widegren-793 are directed to improved quality-of-service in IP multimedia subsystems built on telecommunication networks such as UMTS and GRPS.

EX1005, ¶3 ("The present invention generally relates to … coordinating Quality of Service (QoS) provisioning mechanisms in IP networks with multimedia applications."), ¶5 ("Of particular interest to this invention is the specific case where at least one of the access networks is a UMTS or GSM/GPRS network."); EX1006, 11:33-37 ("The present invention … employ[s] policy mechanisms .. to provide policy driven filtering and gating of data flow over a QoS connection in a packet data network, such as a UMTS/GPRS network."); EX1007, 1:21-25 ("IP Multimedia Subsystem (IMS) is the technology defined by the Third Generation Partnnership Project (3GPP) to provide IP Multimedia services over mobile communication networks."). In addition, all three references build on the same underlying technology, *i.e.*, IP Multimedia Subsystems built on a GPRS bearer service and using IP application signaling, namely, Session Initiation Protocol. EX1005, ¶63; EX1006, 9:18-24; EX1007, 1:21-2:2. *See* EX1003, ¶164.

Second, Widegren expressly teaches that its invention may be used for video applications, such as "streaming services (audio or video)," and would thus be particularly suitable for implementing IPTV functionality as disclosed by Astrom. EX1005, ¶4; *see also id.*, ¶5 (describing communication with an "application server 103, which may be configured as a video server"); EX1003, ¶161. A POSITA would be further motivated by consumer demand for IPTV services, which are often cheaper than other television services (such as satellite or cable). *Id.* In particular,

a POSITA would have been motivated to add a pause capability as disclosed in Astrom to an IPTV functionality implemented on Widegren's IMS architecture because pause is one of the standard user control functions in video streaming (along with other basic functions such as rewind and fast forward). Widegren's "pause" capability would thus be one of the most obvious functions to include in Widegren to provide better user control. EX1003, ¶161.

Third, Astrom expressly teaches that IPTV is a "popular choice" for "telecommunication operators," and provides improved functionality for IPTV solutions "utiliz[ing] the standardized IMS communication system and its network architecture." EX1007, 2:7-29. A POSITA would thus be motivated to apply Astrom's teachings to provide improved IPTV functionality in a standardized IMS system such as Widegren's. EX1003, ¶162.

Fourth, a POSITA would have been specifically motivated to apply Astrom's teachings regarding IPTV stream management as session-level controls in Widegren's system. EX1003, ¶163. Widegren expressly teaches that session-level control of media streams "ensures control of the end-to-end QoS" for multimedia services "and enhanced interworking between GPRS/UMTS and other networks." EX1005, ¶196. Widegren further discloses that session level signaling "is particularly useful when the terminal accesses the network over a radio interface"

(*e.g.*, a mobile telecommunications network "because scarce radio resources are saved." *Id.*, ¶197.

A POSITA would have reasonably expected the combination to succeed. EX1003, ¶165. As the '669 patent, Widegren, Widegren-793, and Astrom all recognize, IP Multimedia Subsystems and Session Initiation Protocol were well known, standardized technologies well before the date of the '669 patent, and would have been familiar to a POSITA. Applying and combining techniques using these well-known standardized technologies would have been well within the capabilities of a POSITA, and would have required nothing more than the application of known techniques to improve similar devices in a predictable way. EX1003, ¶165.

Finally, Widegren, Widegren-793, and Astrom are analogous art to the '669 patent because all four are directed to managing sessions in a network, and in particular, in an IP Multimedia Subsystems using Session Initiation Protocol. EX1001, Abstract, 1:23-29; EX1005, Abstract, ¶63; EX1006, Abstract, 9:18-24; EX1007, Abstract (describing an "IPTV System" that "utilizes the standardized IMS communication system"), 1:21-2:2 (discussing IMS and SIP). EX1003, ¶166.

2. Claim 13: The method according to claim 1, wherein the network is an IP Multimedia Subsystem (IMS) network comprising an IMS core connected to a Service Control Function (SCF), wherein the SCF is configured for managing associated sessions between the network and the User Equipment, wherein the network element is the SCF.

Wherein the network is an IP Multimedia Subsystem (IMS) network:

Widegren expressly discloses using its invention in a network including an "IP multimedia subsystem" network. EX1005, ¶109. In addition, the network elements that establish and manage the multimedia session (in particular, the PCF and P-

CSCF) are part of the IMS network. *Id.*, Fig. 21 (reproduced and annotated below). *See* EX1003, ¶167.

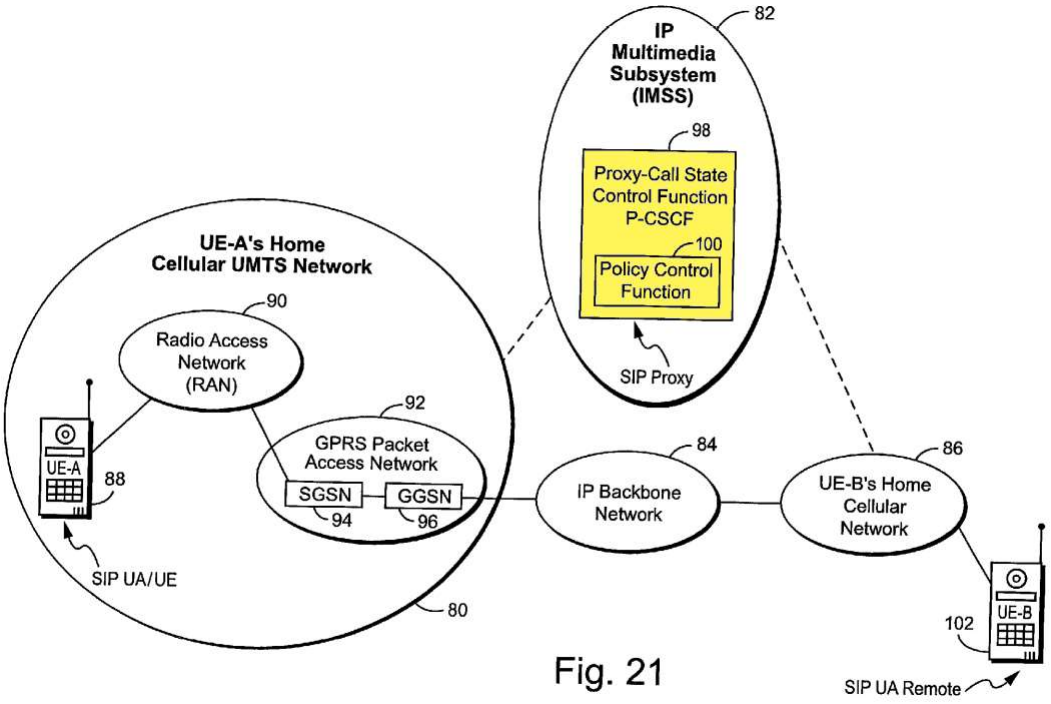


Fig. 21

Comprising an IMS core: The '669 patent describes an IMS core as comprising "a set of Call/Session Control Functions (CSCF)," which include "a Proxy-CSCF (P-CSCF), an Interrogating-CSCF (I-CSCF) and an Serving-CSCF (S-CSCF)." EX1001, 7:2-6. A POSITA would have understood that Widegren's IMS network includes the IMS core components because they are standardized elements defined in and required by the applicable 3GPP standards. *See* EX1007, 6:8-17 ("Call/Session Control Functions (CSCFs) operate as SIP proxies within the IMS. The 3GPP architecture defines three types of CSCFs: the Proxy CSCF (P-CSCF) which is the first point of contact within the IMS for a SIP terminal; the Serving

CSCF (S-CSCF) which provides services to the user that the user is subscribed to; and the Interrogating CSCF (I-CSCF) whose role is to identify the correct S-CSCF and to forward to that S-CSCF a request received from a SIP terminal via a P-CSCF."). EX1003, ¶168.

Alternatively, it would have been obvious to a POSITA to include the standardized CSCFs comprising the IMS Core in Widegren's IMS network in view of Astrom, and a POSITA would have been motivated to do so in order to provide an IMS network compliant with 3GPP standards. Further, a POSITA would have reasonably expected the combination to succeed since it merely involves the application of well-known elements defined and published in 3GPP standards. EX1003, ¶169.

Connected to a Service Control Function (SCF): The '669 patent describes the SCF as "IPTV service control functions … for controlling IPTV services in the network." EX1001, 7:7-9. "[A]pplication servers" may "compris[e] the SCFs." *Id.*, 7:39-42. Widegren expressly discloses communication with an "application server 103, which may be configured as a video server." EX1005, ¶5. Further, Widegren-793 discloses that the application server may be an SIP proxy server, working in conjunction with the PCF to apply policy controls to a data stream. EX1006, 11:37-

42, 14:10-35, 15:1-4, 15:34-47. Thus, the application server together with the PCF comprise an ***SCF***. EX1003, ¶170.

To the extent PO argues that the SCF of the '669 patent must include an IPTV application server, it would have been obvious to add IPTV functionality, including an IPTV application server, to Widegren's system in view of Astrom. EX1003, ¶171.

Astrom expressly discloses an IMS network that includes an "IPTV Application Server (IPTV-AS)." EX1007, 3:4-16. In addition, Astrom discloses that the IPTV Application Server is connected to and communicates with the IMS core (*i.e.*, the three CSCFs). EX1007, Fig. 1 (illustrating communications between the IPTV AS, S-CSCF, I-CSCF, and P-CSCF), Fig. 5 (same for time-shift feature specifically). EX1003, ¶172.

A POSITA would have been motivated to add a IPTV functionality, including an IPTV Application Server, as suggested by Astrom, to Widegren's system, and would have reasonably expected the combination to succeed, for the reasons provided in Section VII.C.1 above. EX1003, ¶173.

Wherein the SCF is configured for managing associated sessions between the network and the User Equipment: As discussed for the preceding limitation, Widegren and Widegren-793 disclose an SCF in the form of an SIP proxy (application server, and in the combined system, IPTV-AS) working together with

the PCF. EX1006, 11:37-42, 14:10-35, 15:1-4, 15:34-47. In addition, the SIP proxy and PCF may together comprise the P-CSCF. *Id.*, Fig. 19. As discussed in Ground 1, Widegren discloses that the P-CSCF and the PCF manage multimedia sessions (***composition sessions***) and their associated media streams (***associated sessions***) between the network and the user equipment. *See* Ground 1, Claims 4, 18; EX1003, ¶174.

Wherein the network element is the SCF: As discussed in the preceding limitation, the SCF in the combined system of Widegren, Widegren-793, and Astrom is the P-CSCF, which includes the SIP proxy (application server) and PCF. Further, as described in Ground 1, the P-CSCF and PCF are the network element that manages media streams (***associated sessions***) between the network and the user equipment. *See* Ground 1, Limitation 1b, Claims 4, 18; EX1003, ¶175.

3. Claim 23: The method according to claim 21, wherein modifying the composition session, using the signaling in the composition session, comprises selectively pausing data streams of the two or more sessions in response to a detection of an incoming call destined for the user equipment.

Widegren discloses that its multimedia sessions may be used in IP networks that support applications such as "streaming services (audio or video)." EX1005, ¶4. It would have been obvious to a POSITA to include the claimed functionality in Widegren's system in view of Astrom. EX1003, ¶176.

Astrom discloses a method of handling incoming calls in an IPTV system using an "Incoming Call Notification sequence with Time-Shift functionality." EX1007, 18:6-21:3. In this scenario, when an incoming call is received on the IPTV device, the user may accept the call and start a time-shift operation. *Id.*, 19:16-25. In response, the IPTV application server begins recording the currently viewed television channel, and display of television content on the user's device is interrupted in order to accept the incoming call. *Id.*, 19:27-20:20. When the call completes, the user may resume viewing the time-shifted (recorded) content, and the application server delivers the recorded content to the user's device for playback. *Id.*, 20:22-21:22. The '669 patent admits that in Astrom's solution, "a ***broadcast stream (channel) is paused upon receipt of an incoming call***." EX1001, 2:34-39. When combined with Widegren, it would have been obvious to a POSITA to apply Astrom's pause functionality as a session level control, so that all data streams associated with a session may be collectively managed, consistent with Widegren's teachings. EX1003, ¶177.

A POSITA would have been motivated to add a data stream pause on received call functionality, as suggested by Astrom, to Widegren's system, implemented as a session-level control, and would have reasonably expected the combination to succeed, for the reasons provided in Section VII.C.1 above. EX1003, ¶178.

VIII. THE BOARD SHOULD NOT EXERCISE ITS DISCRETION TO DENY INSTITUTION

A. *Fintiv*

Fintiv Factors 1-5—concerning effects on (and of) parallel district court litigation—all favor institution because ***there is no parallel litigation*** concerning the validity of the '669 patent between Petitioner and Patent Owner. Petitioner has filed a separate action concerning non-infringement of the '669 patent but Petitioner did not challenge the validity of the '669 Patent. Further, the Petition's merits are compelling (Factor 6), which alone demonstrates that the PTAB should not discretionarily deny institution under Fintiv.

B. § 314(a)

The Board considers the *General Plastic* factors in deciding whether to deny a Petition under § 314(a). There was a previous IPR involving the '669 patent, but the IPR history of the '669 patent is distinguishable from *General Plastic*, such that § 314(a) and *General Plastic* do not provide a basis to deny the Petition.

As an initial matter, the present petition was filed by a different petitioner, challenging different claims based on different prior art. *General Plastic Industrial Co., Ltd. v. Kabushiki* Kaisha, IPR2016-01357 et al., Paper 19 (Sep. 6, 2017). On February 10, 2022, Ericsson filed a petition for *inter partes review* in IPR2022-00557, challenging claims 1-3, 6, 8, 10-12, 21-22, and 24-25 of the '669 patent based on a combination of six references, none of which is relied upon in this Petition.

Ericsson Inc. v. Koninklijke KPN N.V., IPR2022-00557, Paper 2 (Feb. 10, 2022). This Petition is filed by Samsung Electronics, challenging claims 2-9, 13-18, 20, and 23.

Nor is this Petition a follow-on to the petition filed by Ericsson to cure the deficiency of the Ericsson Petition after it was denied; again, this Petition is a separate Petition challenging different claims by a different petitioner based on different prior art. *See General Plastic*, IPR2016-01357 (considering whether the petitioner knew or should have known of the prior art asserted in the second petition, and whether the petitioner received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition, at the time of filing of the first petition. *General Plastic*, IPR2016-01357.

For similar reasons, the remaining *General Plastic* factors favor the institution of this Petition as well. Factor 4 inquires into the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition; Factor 5 concerns whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent. *Id.* Because this Petition is not filed by Ericsson, these factors do not apply to this Petition and does not form a basis for denying this Petition.

The Board also considers its finite resources in petition institution. *Id.* This Petition challenges a different set of claims, is based on a different set of grounds and different prior art, and by a different petitioner, thus this Petition does not exploit the Board's limited resources as a follow-on petition. *Cf. Alivecor, Inc. v. Apple Inc.*, IPR2023-00949, Paper 8 (Jan. 9, 2024) (instituting two petitions filed by the ***same*** petitioner where the claims challenged between the petitions were substantially different).

C. § 325(d)

The same or substantially the same prior art or arguments were not previously presented to the Office. Widegren (EX1005) and Widegren-793 (EX1006) did not appear during the prosecution of the '669 patent. Astrom was cited in an IDS dated July 13, 2011, and ETSI TS 183 063 was cited in an IDS dated November 11, 2016. However, the Examiner did not rely on Astrom or ETSI TS 183 063 as a ground of rejection, nor did the Examiner rely on Astrom or ETSI TS 183 063 in combination with any other prior art, as this petition relies on the references in combination with Widegren and Widegren-793, which were not before the Examiner. In addition, the Examiner erred to the extent he failed to consider Astrom's disclosure of CSCFs, SCFs, and selective pause functions, and ETSI TS 183 063's disclosure of broadcast, content-on-demand, and network personal video content. Thus, Petitioner's

arguments regarding Astrom and ETSI TS 183 063 are substantively different than those considered by the Examiner.

IX. MANDATORY NOTICES AND FEES

A. Real Party-In-Interest

The real parties-in-interest for Petitioners are Samsung Electronics America, Inc. and Samsung Electronics Co., Ltd.

B. Related Matters

Petitioner filed a declaratory judgment of non-infringement against the '669 patent in related district court litigation captioned *Samsung Electronics Co. Ltd et al, v. Koninklijke KPN N.V. et al*, 1:24-cv-01433-UNA (D. Del.).

C. Counsel and Service Information

Petitioner provides the following counsel and service information. Petitioner consents to electronic service the email addresses listed in the table below. Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this Petition.

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D. Payment of Fees

The undersigned authorizes the Office to charge the fee required for this Petition for *Inter Partes* Review to Deposit Account No. 50-5708. Any additional fees that might be due are also authorized.

X. CONCLUSION

For the reasons above, *inter partes* review is requested.

Date: January 17, 2025

Respectfully submitted,

By: */s/ James M. Glass*

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS, AND TYPE STYLE REQUIREMENTS

1. This Petition complies with the type-volume limitation of 14,000 words, comprising 13,772 words, as counted using the Microsoft Word software that was used to prepare this paper, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman.

Date: January 17, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on January 17, 2025, true and correct copies of the foregoing document and supporting materials were served in its entirety on the Patent Owner at the following address of record as listed on PAIR via Priority Mail Express® or Express Mail:

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Date: January 17, 2025

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