IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

BECK BRANCH LLC, Plaintiff, **v.** **JUNIPER NETWORKS, INC.,** Defendant.	**CIVIL ACTION NO 6:18-cv-634** **JURY TRIAL DEMANDED**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

1. This is an action for patent infringement in which Beck Branch LLC makes the following allegations against Juniper Networks, Inc.

PARTIES

2. Plaintiff Beck Branch LLC ("Plaintiff") is a Texas limited liability company with its principal place of business at 101 E. Park Blvd, Suite 600, Plano, TX 75074.

3. On information and belief, Juniper Networks, Inc. ("Defendant" or "Juniper Networks") is a corporation organized and existing under the laws of the State of Delaware, having an established place of business in this District at 5830 Granite Parkway, Suite 850, Plano, Texas 75024.

JURISDICTION AND VENUE

4. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. On information and belief, venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because Defendant has a regular and established place of business in this district (5830 Granite Parkway, Suite 850, Plano, TX 75024), transacted business in this District, and has committed and/or induced acts of patent infringement in this district.

6. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this Judicial District.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 6,873,620 (JUNOS)

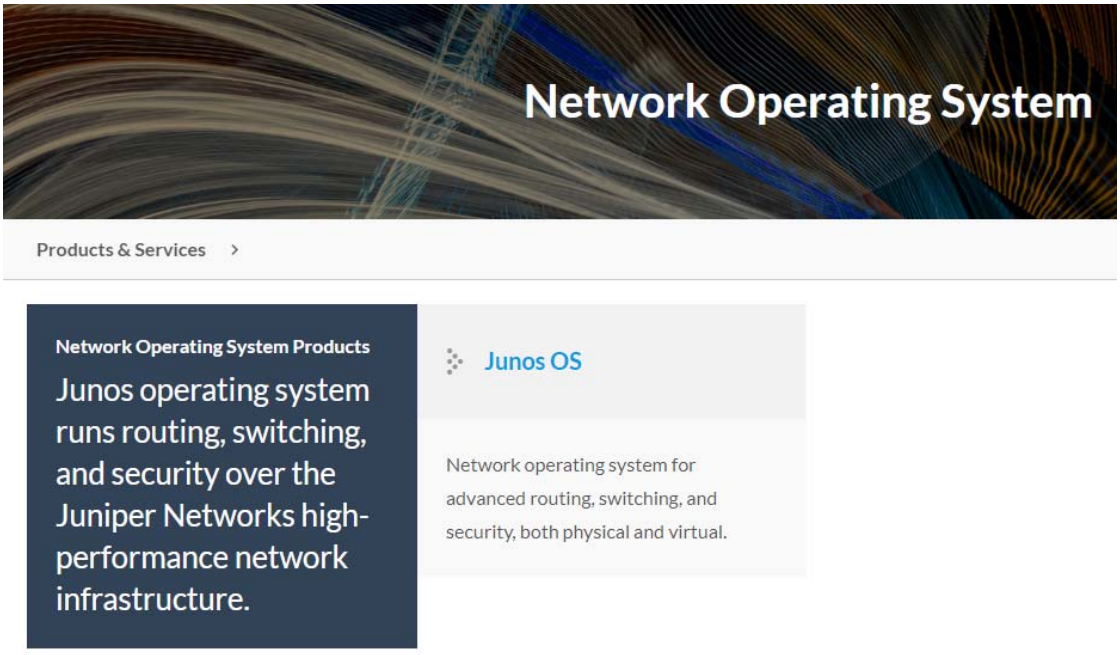
7. Plaintiff is the owner of United States Patent No. 6,873,620 ("the '620 patent") entitled "Communication Server Including Virtual Gateway to Perform Protocol Conversion and Communication System Incorporating the Same." The '620 Patent issued on March 29, 2005. A true and correct copy of the '620 Patent is attached as Exhibit A.

8. Defendant owns, uses, operates, advertises, controls, sells, and otherwise provides products and/or services that infringe the '620 patent. The '620 patent provides, among other things, " A communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols, said communication server comprising: a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway, a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol and a dynamic database identifying the current status of each actual connection between physical devices; and a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices and converting the protocol of said message to a protocol compatible with the network to which said message is being sent wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic therethrough."

9. Defendant directly and/or through intermediaries, made, has made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or services that infringed one or more claims of the '620 patent, including at least Claim 23, in this district

and elsewhere in the United States. By making, using, importing, offering for sale, and/or selling such products and services, and all like products and services, Defendant has injured Plaintiff and is thus liable for infringement of the '620 patent pursuant to 35 U.S.C. § 271.

10. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols. For example, Juniper Networks provides JUNOS network operating system for Integrated Convergence Services such as Session Initiation Protocol (SIP) Trunking via SRX Series Services Gateways based on cloud Public Branch Exchange (PBX) for IP based communication. When a SIP Trunking based call is placed to a Public Switched Telephone Network (PSTN) using Juniper Networks JUNOS (which when installed on a computing device comprise one or more virtual devices), the call is routed via the Juniper Networks VoIP Network and SRX Series Media Gateway (MGW) included in the Juniper Network ("communication server"). The messages between Juniper Networks' SIP Trunk and the PSTN are transmitted via the Juniper Networks VoIP Network.



Source: https://www.juniper.net/us/en/products-services/nos/

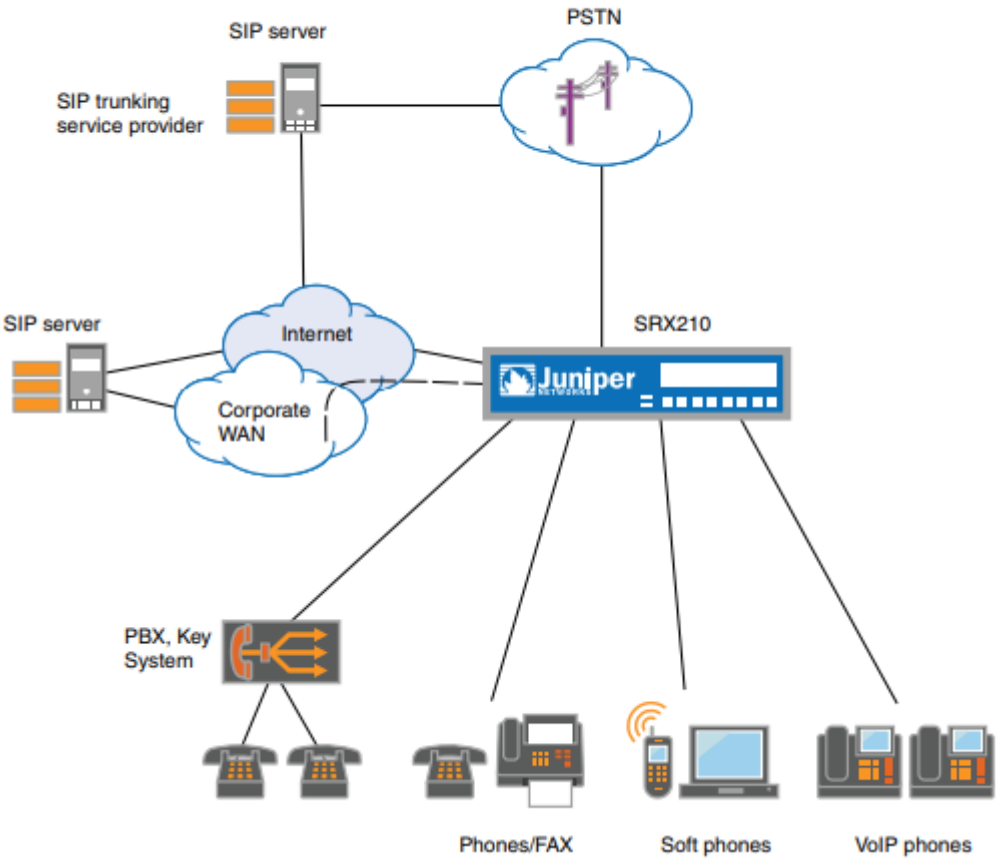
JUNIPER NETWORKS

JUNOS® Software

Integrated Convergence Services Configuration and Administration Guide for SRX210 and SRX240 Services Gateways

Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 1

Figure 1: SRX Series Services Gateway Running Integrated Convergence Services



Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 6

The SRX Series MGW and the SRX Series SCS support the following RFC standards:

- SIP protocol transports: UDP and TCP (RFC 3261–Session Initiation Protocol)
- RTP: RFC 3550 (A Transport Protocol for Real-Time Applications)
- Voice codec support: G.711µ, G.711-A, G729 AB for voice encoding and decoding handled by the DSP media processor.

Integrated Convergence Services supports the following features for analog fax machines:

- Codec support to enable analog fax to be sent over G.711 encoding.
- Support to directly connect an analog fax machine to an FXS port, referred to as direct mapping, bypassing auto attendant.
- SIP registration of FXS in which each FXS port may be registered to the primary SIP peer call server via the SRX Series MGW.

Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 6

SRX Series Integrated Convergence Services Media Gateway Overview

This topic gives an overview of the SRX Series media gateway (SRX Series MGW) and the features that it provides.

Integrated Convergence Services provides a standards-based Session Initiation Protocol (SIP) media gateway (SRX Series MGW) that connects SIP and time-division multiplexing (TDM) networks so that calls can be made from and routed to local analog telephones, fax machines, legacy PBX (Key) systems, and SIP phones within the branch and across PSTN or SIP trunks.

The SRX Series MGW includes the following features:

- An onboard DSP that accelerates and offloads media processing tasks from the SRX Series MGW's main CPUs, resulting in increased performance.
- Onboard telephony foreign exchange station (FXS) and foreign exchange office (FXO) POTS interfaces that provide local number preservation for incoming calls and support for emergency calls. If the SRX Series survivable call server (SRX Series SCS) component of Integrated Convergence Services is configured, these interfaces can also be used for call routing when the central SIP peer call server cannot be reached because of network failure conditions or other fault conditions.
- Telephony interface expansion available through Mini-PIM interface card options, includes a 2 Port FXS + 2 Port FXO Mini-PIM, a 4 Port FXO Mini-PIM, a 4 Port FXS Mini-PIM, and an IP Flex T1/E1 Mini-PIM with initial support for T1-CAS (loopstart only).

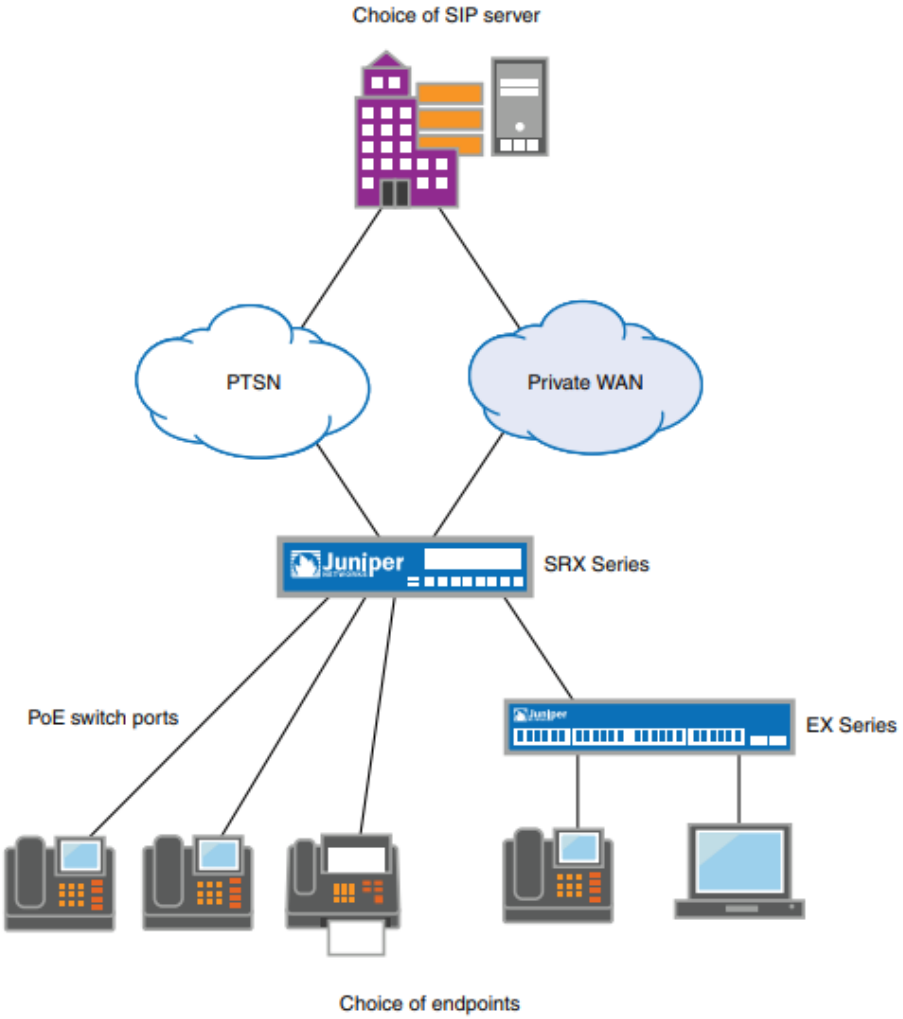
Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 4-5

Table 19: Interfaces, Trunks and Their Trunk Groups for Using the SRX210 as a Front-end to the PBX with SIP Trunking Example

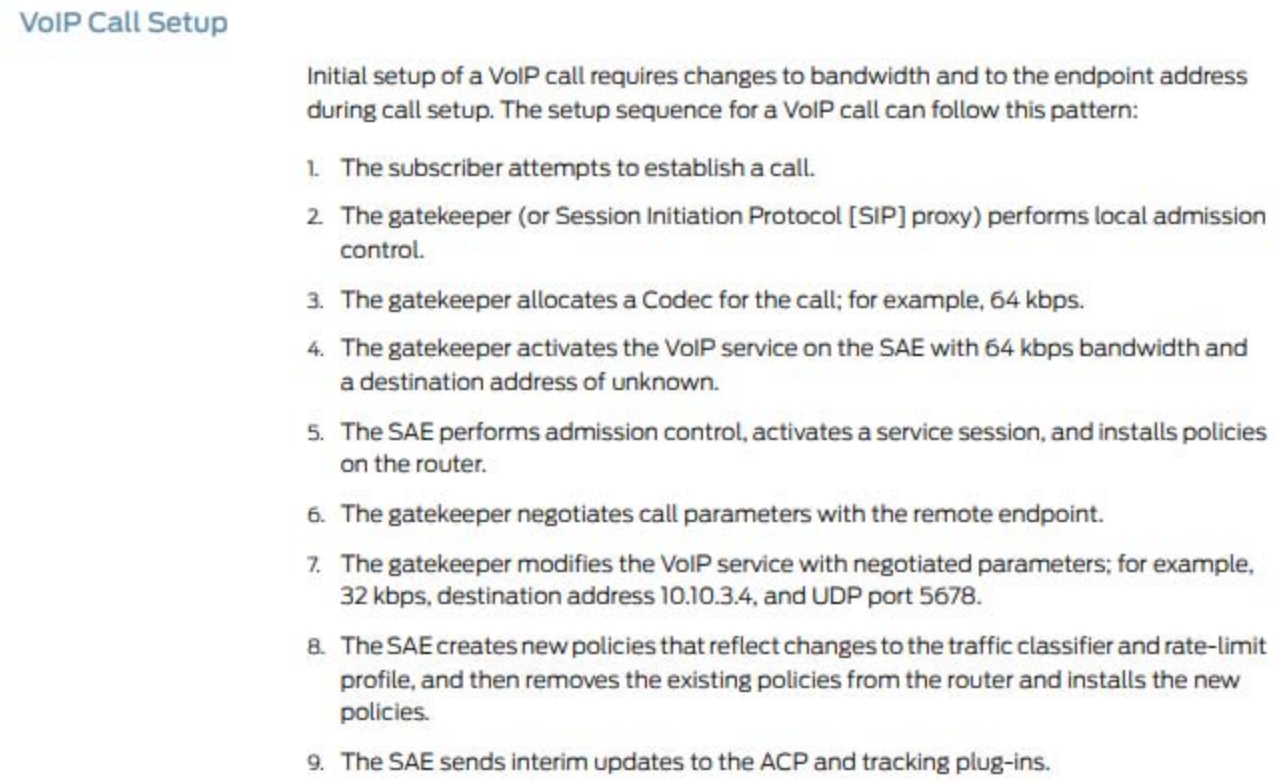
Interface	Corresponding Trunk	Trunk Group	Provisioned For
	SIP trunk	sip-trnk-grp	SIP trunk from a SIP trunk service provider for IP calls outside the branch.
onboard fxo-0/0/12	fxo1	fxo-pstn-trnk-grp	Calls to and from the PSTN, Using an fxs trunk, the SRX210 Series SCS routes the call to an fxo interface on the PBX or from one.
onboard fxo-0/0/13	fxo2	fxo-pstn- grp-911	Outgoing emergency calls to the PSTN trunk. Reserved for emergency calls.

Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 77

Figure 2: SRX Series Integrated Convergence Services Device Allowing SIP Peer Call Server and Endpoint Flexibility



Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 9



VoIP Call Setup

Initial setup of a VoIP call requires changes to bandwidth and to the endpoint address during call setup. The setup sequence for a VoIP call can follow this pattern:

1. The subscriber attempts to establish a call.
2. The gatekeeper (or Session Initiation Protocol [SIP] proxy) performs local admission control.
3. The gatekeeper allocates a Codec for the call; for example, 64 kbps.
4. The gatekeeper activates the VoIP service on the SAE with 64 kbps bandwidth and a destination address of unknown.
5. The SAE performs admission control, activates a service session, and installs policies on the router.
6. The gatekeeper negotiates call parameters with the remote endpoint.
7. The gatekeeper modifies the VoIP service with negotiated parameters; for example, 32 kbps, destination address 10.10.3.4, and UDP port 5678.
8. The SAE creates new policies that reflect changes to the traffic classifier and rate-limit profile, and then removes the existing policies from the router and installs the new policies.
9. The SAE sends interim updates to the ACP and tracking plug-ins.

Source: https://www.juniper.net/documentation/en_US/src4.8/information-products/pathway-pages/voip-services/voip-services.pdf, page 8

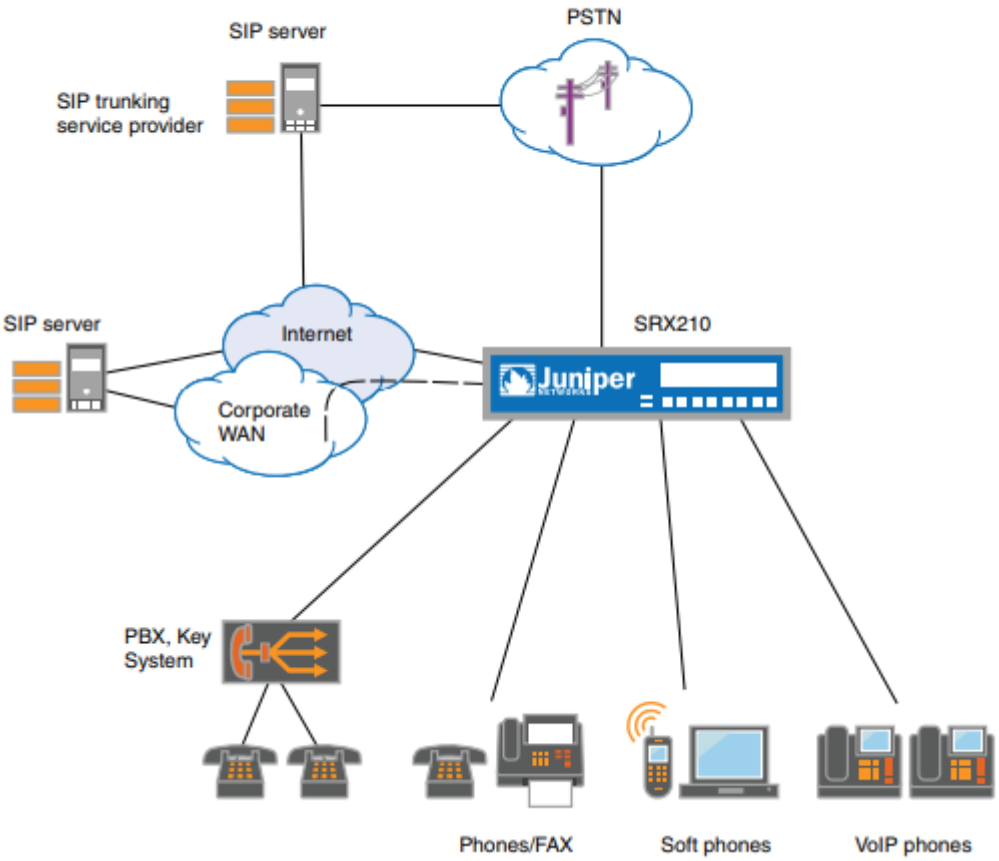
11. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway. Upon information and belief, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk for Juniper Networks VoIP Network using SIP Trunking functionality which comprises a knowledge base registry to identify the registered physical devices. Further, the server uses Juniper Networks VoIP Network to transmit messages from Juniper Networks SIP Trunk to the PSTN through SRX Series Media Gateway (MGW).

Table 4: Configuring the SRX Series Basic Media Gateway Steps Overview

Task	Action	Description
Configure information about the peer call server.	Specify a name for the peer call server.	You specify the peer call server address in either of the following formats: Fully Qualified Domain Name (FQDN) or IPv4 address. NOTE: Instead of using an IP address, you can use a fully qualified domain name (FQDN) to indicate that multiple peer call servers are used. If you do, SRX Series survivable call server (SRX Series SCS) sends heartbeat messages to all servers to determine which ones are available. It uses the preferred server, based on the result of the domain name services (DNS).
	Specify a description of the peer call server such as its location (optional).	
	Specify the peer call server address.	
	Specify SIP protocol information. • port—The number used for the communications endpoint for the SIP protocol. The default port 5060 is used. • transport—The transport used for the SIP protocol, UDP, TCP or TLS. The default transport UDP is used.	The SIP protocol information is provided here for completeness.
	Specify the codec.	For this example configuration, the default set of codecs is used. Included codecs are specified in the following order: G711-μ, G711-A, G729AB.
	Specify the DTMF signaling method.	The default DTMF, as specified in RFC 2833, is used. (Other supported methods are inband and sip-info.)
	Specify the authentication ID and password used by the SRX Series MGW to authenticate itself to the peer call server, if the peer call server challenges it to do so.	If the peer call server requires authentication information, you must configure it. The peer call server might challenge the SRX Series MGW to authenticate itself when it registers to it. You obtain this information from the peer call server administrator.

Source: https://www.juniper.net/documentation/en_US/src4.8/information-products/pathway-pages/voip-services/voip-services.pdf, page 18

Figure 1: SRX Series Services Gateway Running Integrated Convergence Services



Source: https://www.juniper.net/documentation/software/junos-security/junos-security10.2/junos-ics-config-admin/junos-convergence-services-config-admin-guide.pdf, page 6

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onboard fxo-0/0/13	fxo2	fxo-pstn- grp-911	Outgoing emergency calls to the PSTN trunk. Reserved for emergency calls.

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Further, Juniper Networks VoIP Network also maintains a knowledge base comprising a registry identifying the phones and devices within the customers' network.

12. Based on information and belief, Juniper Networks makes, uses, sells and/or offers for sale a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol. Upon information and belief, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk for Juniper Networks VoIP Network using SIP Trunking functionality which comprises a logical table to identify the type of connection and selects SRX Series Media Gateway (MGW) to convert messages from Session Initiation Protocol (SIP) to PSTN.

13. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a dynamic database identifying the current status of each actual connection between physical devices. Upon information and belief, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk for Juniper Networks VoIP Network using SIP Trunking functionality which comprises a Juniper Networks VoIP Network further comprising a dynamic database to identify the current status of connection between the physical devices (including IP phones, installation computers and the physical PSTN terminals).

14. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices. For example, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk using SIP Trunking functionality comprising a Juniper Networks VoIP Network ("virtual gateway") which uses the SRX Series Media Gateway (MGW) for protocol conversion upon receiving the message to be transmitted from Juniper Networks to the PSTN.

15. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway converting the protocol of said message to a protocol compatible with the network to which said message is being sent. For example, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk using SIP Trunking functionality comprising an SRX Series Media Gateway (MGW) which converts the protocol of the messages sent from Juniper Networks to the protocol used within the PSTN.

16. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on

message traffic there through.For example, Juniper Networks and/or its customers utilize Juniper Networks SIP Trunk using SIP Trunking functionality comprising Juniper Networks VoIP Network accesses and updates information stored in the registry based on the communicating virtual devices.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 6,873,620 (SRC)

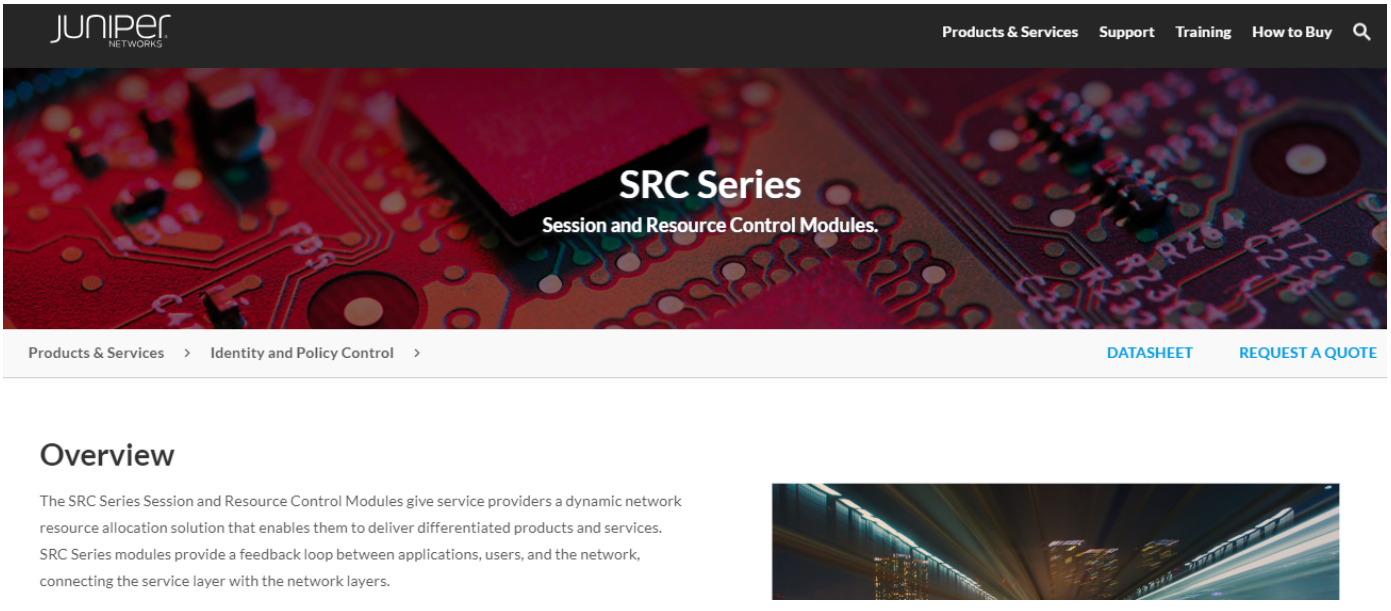
17. Plaintiff is the owner of United States Patent No. 6,873,620 ("the '620 patent") entitled "Communication Server Including Virtual Gateway to Perform Protocol Conversion and Communication System Incorporating the Same." The '620 Patent issued on March 29, 2005. A true and correct copy of the '620 Patent is attached as Exhibit A.

18. Defendant owns, uses, operates, advertises, controls, sells, and otherwise provides products and/or services that infringe the '620 patent. The '620 patent provides, among other things, " A communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols, said communication server comprising: a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway, a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol and a dynamic database identifying the current status of each actual connection between physical devices; and a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices and converting the protocol of said message to a protocol compatible with the network to which said message is being sent wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic therethrough."

19. Defendant directly and/or through intermediaries, made, has made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or services that infringed one or more claims of the '620 patent, including at least Claim 23, in this district and elsewhere in the United States. By making, using, importing, offering for sale, and/or selling

such products and services, and all like products and services, Defendant has injured Plaintiff and is thus liable for infringement of the '620 patent pursuant to 35 U.S.C. § 271.

20. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols. For example, Juniper Networks provides SRC (Session and Resource Control) Series Modules for open standards-based communication, including but not limited to Session Initiation Protocol (SIP) based communication. When a SIP based call is placed to a Public Switched Telephone Network (PSTN) using Juniper Networks' SRC software (which when installed on a computing device comprise one or more "virtual devices"), the call is routed via the Border Gateway Control Function (BGCF) and Media Gateway Control Function (MGCF) included in the IP Multimedia Subsystem (IMS) core network included in the Juniper Server ("communication server"). In IMS core network, IMS-Media Gateway (IM-MGW) acts as a gateway for transmission of the messages between Juniper Networks SRC software and the PSTN.



Source: https://www.juniper.net/us/en/products-services/ipc/src-series/

CHAPTER 1

Software Features Overview

SRC Component Overview

The SRC software is a dynamic system. It contains many components that you use to build a subscriber management environment. You can use these tools to customize and extend the SRC software for your use and to integrate the SRC software with other systems. The SRC software also provides the operating system and management tools for C Series Controllers.

Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 3

Repository	
Directory	The SRC software includes the Juniper Networks database, which is a built-in Lightweight Directory Access Protocol (LDAP) directory for storing all SRC data including services, policies, and small subscriber databases. For large subscriber databases, you must supply your own directory.
SRC Configuration and Management Tools	
SRC command line interface (CLI)	Provides a way to configure the SRC software on a C Series Controller from a Junos OS–like CLI. The SRC CLI includes the policies, services, and subscribers CLI, which has separate access privileges.
C-Web interface	Provides a way to configure, monitor, and manage the SRC software on a C Series Controller through a Web browser. The C-Web interface includes a policies, services, and subscribers component, which has separate access privileges.
Simple Network Management Protocol (SNMP) agent	Monitors system performance and availability. It runs on all the SRC hosts and makes management information available through SNMP tables and sends notifications by means of SNMP traps.
Service Management Applications (Run on external system)	
IMS Services Gateway	Integrates into an IP multimedia system (IMS) environment. The SRC software provides a Diameter protocol-based interface that allows the SRC software to integrate with services found on the application layer of IMS.

Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 4

CHAPTER 2

IMS Services Gateway

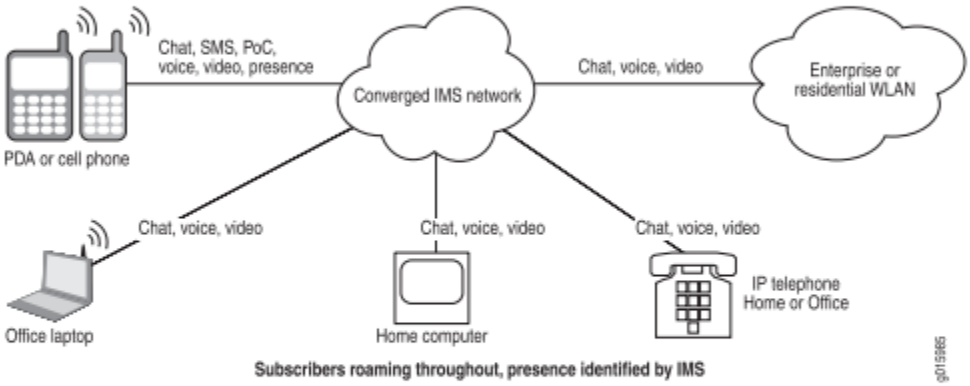
IMS Environment Overview

IP multimedia subsystem (IMS) is a flexible network architecture that allows providers to introduce rich multimedia services across both next-generation packet-switched and traditional circuit-switched networks. It uses open interfaces and functional components that can be assembled flexibly to support real-time interactive services and applications.

Third Generation Partnership Project (3GPP) developed IMS to provide a standards-based architecture for mobile carriers to migrate to their next-generation networks that will support applications that combine voice, video, and data functionality. The European Telecommunications Standards Institute (ETSI) created Telecommunications and Internet Converged Services and Protocols for Advanced Networks (TISPAN) to extend IMS support to fixed-line carriers. This extension is commonly called fixed mobile convergence (FMC). IMS/FMC allows subscribers to access any network (wireless or fixed) from any device (computer, PDA, or cell phone) and be able to move seamlessly from one network to another.

Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 7

Figure 1: A Simplified IMS Converged Network (Service Focus)



By itself, IMS does not specify new services; rather, it provides a framework for network operators to build and launch their services regardless of access method. The IMS architecture simplifies network operations and allows providers to focus on service introduction and business opportunities. For example, an IMS architecture could allow fixed and mobile users to communicate using voice, video, chat, and online gaming, and to take advantage of functionality such as Push-to-Talk over Cellular (PoC; the ability to quickly arrange meetings through a walkie-talkie mechanism), instant messaging, and presence (whether and how a subscriber is available, and how the subscriber wants to be contacted).

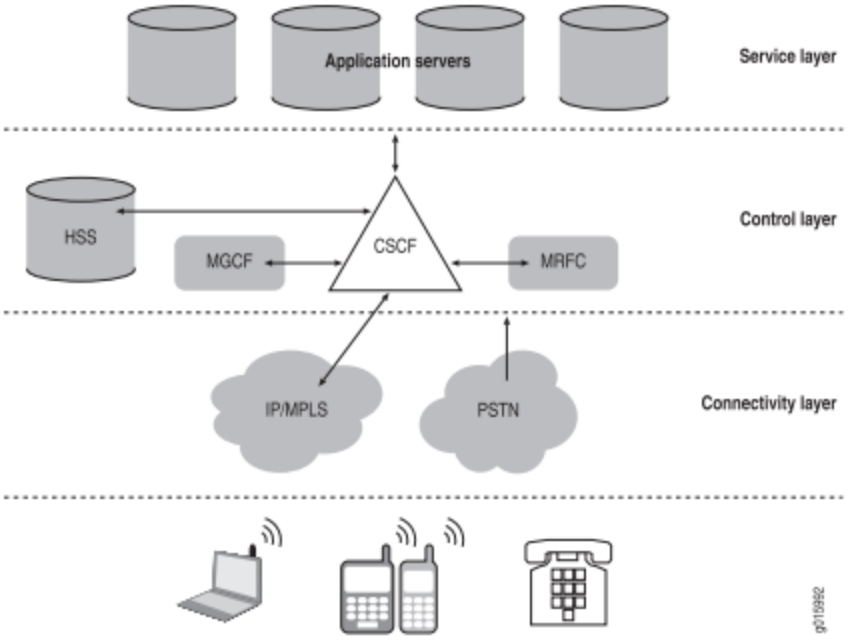
Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 8

IMS Layers

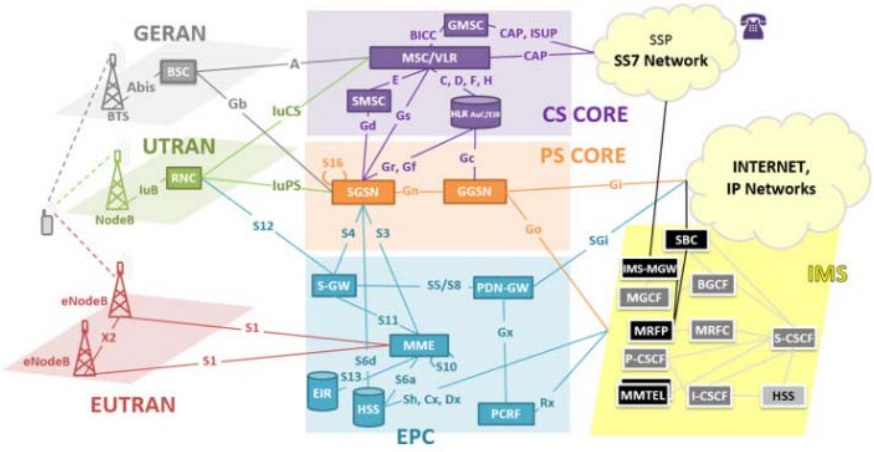
The IMS specifications define functions to handle the signaling and subscriber traffic for multimedia applications. The functions are separated into logical layers, and many of the specified functions often reside in a single platform. Vendors have the flexibility to implement IMS functions in consolidated ways, and it is natural that platforms such as softswitches will combine many logically separate IMS call-processing functions, and that routers will take on some of the session-enforcement and gateway functionality in IMS.

The three layers are the service layer, the control layer, and the connectivity layer. Figure 2 on page 10 shows a high-level view of the IMS architecture.

Figure 2: High-Level View of the IMS Architecture



Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 10



Source: https://www.netmanias.com/en/post/blog/10907/lte-volte/part-3-what-happens-when-a-user-performs-a-voice-call-from-an-lte-4g-network-volte

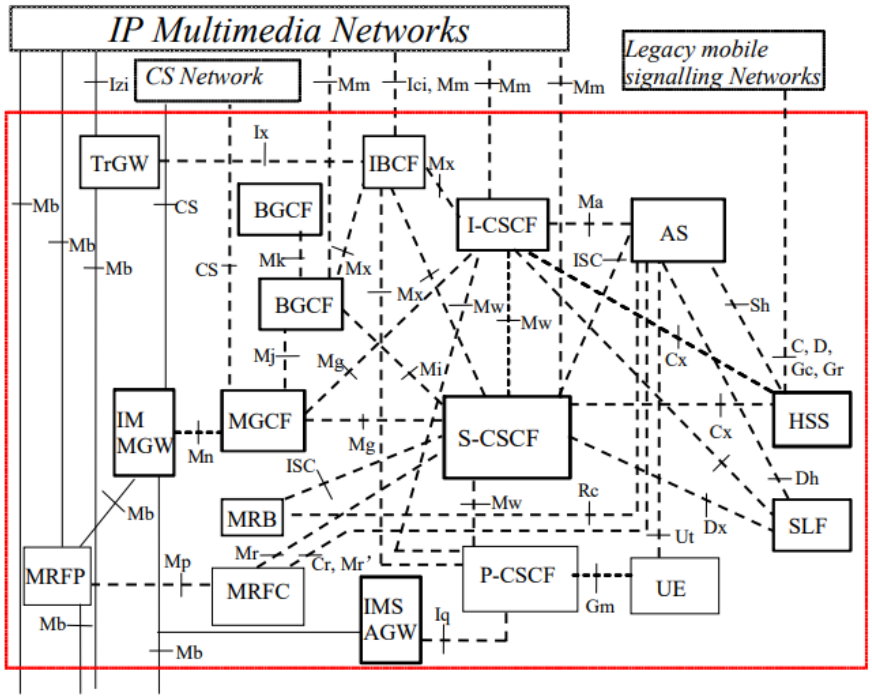
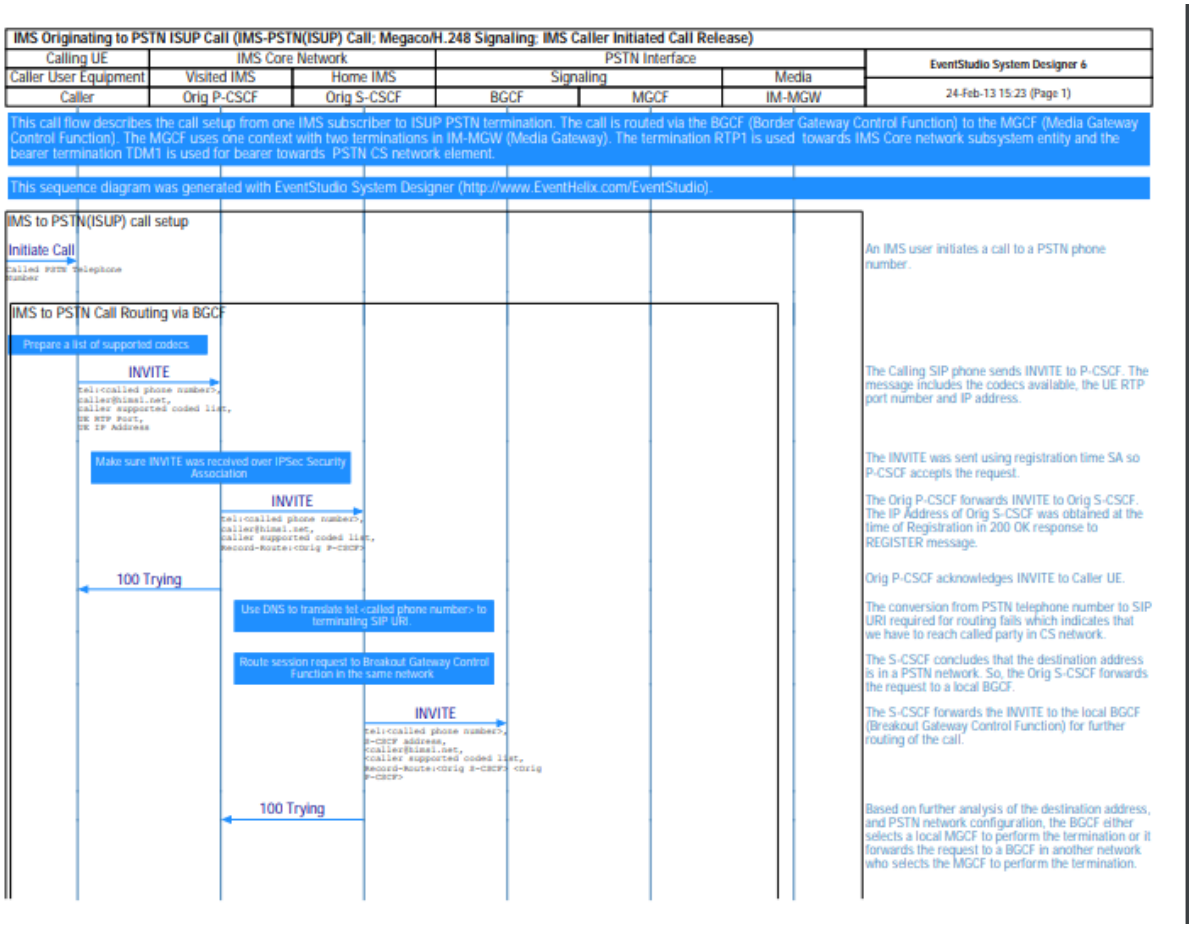


Figure 4.0: Reference Architecture of the IP Multimedia Core Network Subsystem

Source: http://www.etsi.org/deliver/etsi_ts/123200_123299/123228/14.06.00_60/ts_123228v140600p.pdf, page 24



Source: https://www.eventhelix.com/ims/ims-to-pstn-call/ims-to-pstn-callflow.pdf, page 1

21. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality comprising an IMS which further comprises a Home Subscriber Server (HSS) ("Registry") to identify the registered physical devices. IMS uses Serving – Call Session Control Function (S-CSCF) to transmit messages from Juniper Networks UC to PSTN through media gateway IM-MGW.

CHAPTER 2

IMS Services Gateway

IMS Environment Overview

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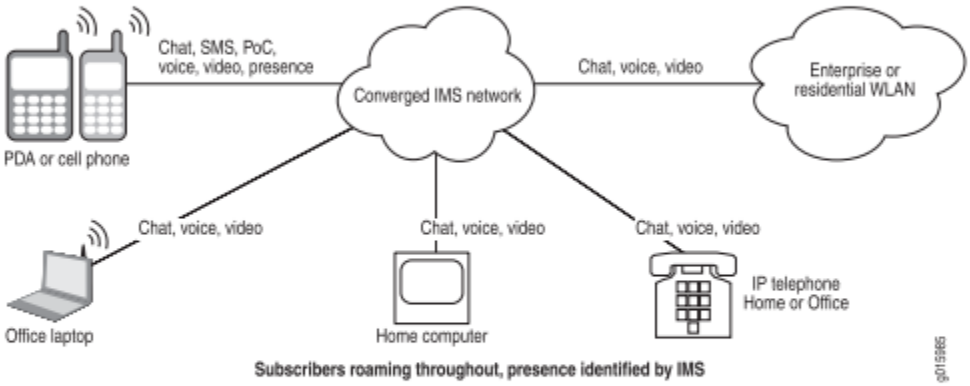
Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 7

Figure 1: A Simplified IMS Converged Network (Service Focus)



By itself, IMS does not specify new services; rather, it provides a framework for network operators to build and launch their services regardless of access method. The IMS architecture simplifies network operations and allows providers to focus on service introduction and business opportunities. For example, an IMS architecture could allow fixed and mobile users to communicate using voice, video, chat, and online gaming, and to take advantage of functionality such as Push-to-Talk over Cellular (PoC; the ability to quickly arrange meetings through a walkie-talkie mechanism), instant messaging, and presence (whether and how a subscriber is available, and how the subscriber wants to be contacted).

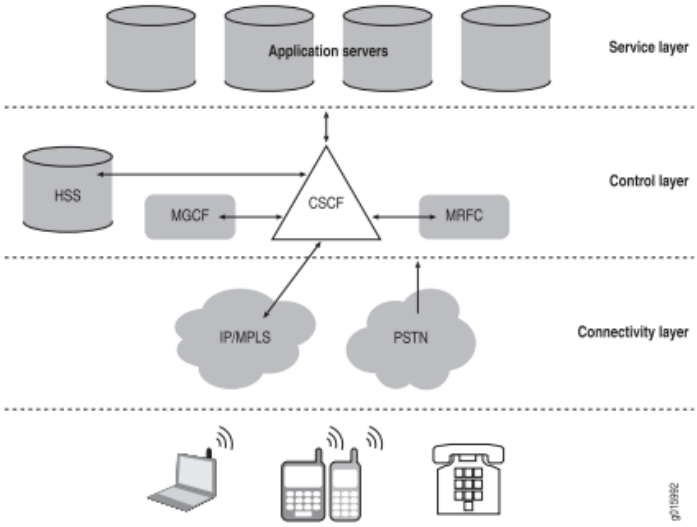
Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 8

IMS Layers

The IMS specifications define functions to handle the signaling and subscriber traffic for multimedia applications. The functions are separated into logical layers, and many of the specified functions often reside in a single platform. Vendors have the flexibility to implement IMS functions in consolidated ways, and it is natural that platforms such as softswitches will combine many logically separate IMS call-processing functions, and that routers will take on some of the session-enforcement and gateway functionality in IMS.

The three layers are the service layer, the control layer, and the connectivity layer. Figure 2 on page 10 shows a high-level view of the IMS architecture.

Figure 2: High-Level View of the IMS Architecture



Source: https://www.juniper.net/documentation/en_US/src4.12/information-products/pathway-pages/ims-services-gateway/ims-services-gateway.pdf, page 10

5.1.2 Procedures related to Serving-CSCF assignment

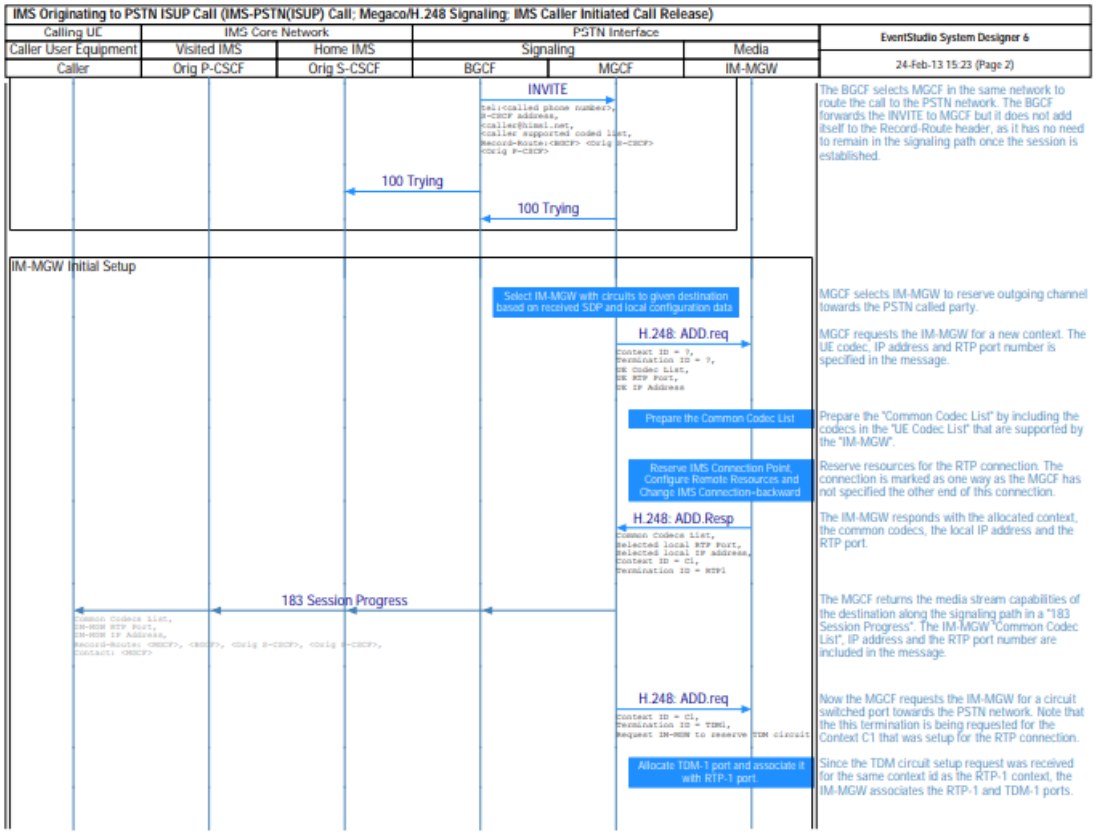
5.1.2.1 Assigning a Serving-CSCF for a user

When a UE attaches and makes itself available for access to IMS services by explicitly registering in the IMS, a S-CSCF shall be assigned to serve the UE.

The assignment of an S-CSCF is performed in the I-CSCF. The following information is needed in the selection of the S-CSCF:

1. Required capabilities for user services
   This information is provided by the HSS.
2. Operator preference on a per-user basis
   This information is provided by the HSS.
3. Capabilities of individual S-CSCFs in the home network
   This is internal information within the operator's network. This information may be used in the S-CSCF selection. This information is obtained by the I-CSCF by methods not standardised in this release.
4. Topological (i.e. P-CSCF) information of where the user is located
   This is internal information within the operator's network. This information may be used in the S-CSCF selection. The P-CSCF name is received in the registration request. The topological information of the P-CSCF is obtained by the I-CSCF by methods not standardised in this Release.
5. Topological information of where the S-CSCF is located
   This is internal information within the operator's network. This information may be used in the S-CSCF selection. This information is obtained by the I-CSCF by methods not standardised in this release.
6. Availability of S-CSCFs
   This is internal information within the operator's network. This information may be used in the S-CSCF selection. This information is obtained by the I-CSCF by methods not standardised in this release.

Source:http://www.etsi.org/deliver/etsi_ts/123200_123299/123228/14.06.00_60/ts_123228v140600p.pdf, page 68



Source: https://www.eventhelix.com/ims/ims-to-pstn-call/ims-to-pstn-callflow.pdf, page 2

Further, Juniper Networks' IMS Services also maintains a knowledge base comprising a registry identifying the phones and devices within the customers' network.

22. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality which utilizes an IMS comprising a Breakout Gateway Control Function (BGCF) ("Logical Table") to identify the type of connection and selects Media Gateway Control Function (MGCF) to convert messages from Session Initiation Protocol (SIP) to PSTN.

23. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a dynamic database identifying the current status of each actual connection between physical devices. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality which comprises an IMS further comprising a dynamic database to identify the current status of connection between the physical devices (including IP phones, installation computers and the physical PSTN terminals).

24. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality comprising a Media Gateway (MGW) ("Virtual Gateway") which uses the MGCF for protocol conversion upon receiving the message to be transmitted from Juniper Networks SRC software to the PSTN.

25. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway converting the protocol of said message to a protocol compatible with the network to which said message is being sent. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality comprising an IM-MGW which converts the protocol of the messages sent from Juniper Networks SRC software to the protocol used within the PSTN.

26. Based on present information and belief, Juniper Networks makes, uses, sells and/or offers for sale a virtual gateway wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic there through. For example, Juniper Networks and/or its customers utilize Juniper Server SIP functionality comprising IM-MGW accesses and updates the information stored in the HSS and BGCF based on the communicating virtual devices.

27. In the alternative, because the manner of use by Defendant differs in no substantial way from language of the claims, if Defendant is not found to literally infringe, Defendant infringes under the doctrine of equivalents.

28. Defendant's aforesaid activities have been without authority and/or license from Plaintiff.

29. In addition to what is required for pleadings in patent cases, and to the extent any marking was required by 35 U.S.C. § 287, Plaintiff and all predecessors in interest to the '620 Patent complied with all marking requirements under 35 U.S.C. § 287.

30. Plaintiff is entitled to recover from Defendant the damages sustained by Plaintiff as a result of the Defendant's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court enter:

1. A judgment in favor of Plaintiff that Defendant has infringed the '620 Patent;

2. A judgment and order requiring Defendant to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for Defendant's infringement of the '620 Patent as provided under 35 U.S.C. § 284;

3. An award to Plaintiff for enhanced damages resulting from the knowing, deliberate, and willful nature of Defendant's prohibited conduct with notice being made at least as early as the date of the filing of this Complaint, as provided under 35 U.S.C. § 284;

4. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees; and

5. Any and all other relief to which Plaintiff may show itself to be entitled.

DEMAND FOR JURY TRIAL

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Respectfully Submitted,

BECK BRANCH LLC

/s/ Papool S. Chaudhari

Dated: December 6, 2018 By: _____

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