'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152
	stores	100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.
	a call processing application (processor 102 is configured by a call processing application) and	call processing application: Processor 102 is configured to act as a call processor. "The packet handling in the present system may be variously configured. For example, in the CPE-Network direction, the processor 102 may be configured to act as a packet handling subsystem to processes frames from the FMP and to generate DSL frames going to the FMP. The ISD/IRG and the FMP/C-FMP include DSL/cable modems (e.g., XDSL/DOCSIS standard cable) modems to terminate the link layers associated with the DSL or coaxial segment of the connection. In a similar manner as the FMP/C-FMP, the processor in the ISD/IRG may be configured to reconstruct the IPv6 packets from DSL frames and then separates IP packets containing voice from those containing data and from those containing signaling." Figure 5; Col. 15, ll. 41-53.
	service profiles (ISD/IRG 22 collects user preference data),	service profiles: The IRG collects user preference data. "The IRG of FIG. 2 may collect subscriber (user) preference data such as equipment and service preferences, service usage data, for example, pay-per-view usage data or utility meter data, viewing/accessing statistics such as shows watched or Internet URL's accessed, new equipment/service installs, and the like for whatever purposes including the downloading of coupons/discounts/premiums for equipment and service preferences and discounted billing. Some of the collected data may be done transparent to the subscriber knowing while other data such as some user preference data may be intentionally input by the subscriber. For example, the user may utilize their remote control to enter preference data that may be stored by a set top device for uploading to the IRG or may utilize their visionphone terminal or personal computer terminal, all of which are coupled to the IRG." Figure 2; Col. 10, ll. 4-19. "In an exemplary embodiment shown in FIG. 5, where an incoming call arrives at the ISD/IRG 22, the control 510 rings one or all of the attached phones. Where a user answers a first phone (e.g., 15A), the utilization of this phone is recorded. Thereafter, the user may continue talking on, this phone and an off-hook status is indicated. Where another call comes in, the user may choose to answer this call via a conventional method such as "call waiting" and/or using multiple lines. Further, the answering machine (described in an attached application) may be

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		configured to indicate that the user is receiving an incoming call at the moment and provide an on-hold menu as discussed in the applications incorporated by reference below. The control 510 may be configured to have a plurality of calls on-hold and toggle between these calls by depressing a DTMF key and/or the hang-up actuator. Alternatively, a digital phone and/or video phone 130 may have any number of lines with a name, address, and, phone number associated with each of the incoming callers." Col. 16, ll. 37-55.
	and which stores executable instructions to mediate communications between the plurality of communication interfaces (processor 102 includes signal co-processor 102A and/or a high performance controller),	instructions to mediate communications Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.
	the instructions causing the network device to detect network signaling events or trigger points in a telephone call (receipt and detection by processor 102 of a telephone call) and	Processor 102 is configured to detect network signaling events or trigger points in a telephone call. "The processor 102 in the ISD/IRG 22 may also be configured to generate signaling packets which may be forwarded to the FMP/C-FMP for later utilization in either an in-band or out-of-band routing subsystem such as a conventional subscriber signaling subsystem (e.g., TR 303). Similarly, the processor 102 in the ISD/IRG 22 may include a subscriber signaling subsystem as part of an external routing subsystem. In this manner, packets received from the FMP/C-FMP in the network-CPE direction (including voice, data, video, and control packets) may be demultiplexed, reformatted with an appropriate protocol, and output to an attached peripheral device connected to the premise distribution network 500." Figure 5; Col. 15, l. 59 – Col. 16, l. 5.
	invoke the call processing application in response to the detected network signaling events or trigger points (processor 102 configured to be invoked in response to detected network signaling events),	The processor 102 configured to be invoked in response to detected network signaling events. "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as . . . transmit messages reporting DTMF, on hook/off hook/flash hook events, support for voice dialing and enablement of special calling features (e.g., through the use of processor 102 which may include signal co-processor 102A and/or a high performance controller such as the 8960)."." Figure 5; Col. 15, ll. 5-20.
	the call processing application operating according to parameters defined in the	Processor 102 is configured to operate according to parameters defined in the

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152
	service profiles (processor 102 controls the call based on pre-determined service conditions)	service profiles. "Additionally, the processor 102 monitors the devices connected to the premise distribution network and stores information concerning which devices are currently in use. In this manner, where there is an incoming call, the ISD/IRG has the intelligence to know which CPE is in use and which CPE is not in use. As a result, if there is an incoming call, the ISD/IRG will not send a ringing tone to any CPE that is already in use, but will route the call to another device that is available." Figure 5; Col. 16, ll. 23-31. "In an exemplary embodiment shown in FIG. 5, where an incoming call arrives at the ISD/IRG 22, the control 510 rings one or all of the attached phones. Where a user answers a first phone (e.g., 15A), the utilization of this phone is recorded. Thereafter, the user may continue talking on, this phone and an off-hook status is indicated. Where another call comes in, the user may choose to answer this call via a conventional method such as "call waiting" and/or using multiple lines. Further, the answering machine (described in an attached application) may be configured to indicate that the user is receiving an incoming call at the moment and provide an on-hold menu as discussed in the applications incorporated by reference below. The control 510 may be configured to have a plurality of calls on-hold and toggle between these calls by depressing a DTMF key and/or the hang-up actuator. Alternatively, a digital phone and/or video phone 130 may have any number of lines with a name, address, and, phone number associated with each of the incoming callers." Col. 16, ll. 37-55.
	wherein the network device consists of one or more customer premise equipment modules (customer premise equipment 10 and ISD/IRG 22).	"The IRG 22 may be located within the home/business, in a wire closet, in the basement or mounted exterior to the home/business." Figure 2; Col. 7, l. 54. "The ISD 22 or IRG 22-1 (FIG. 1C, 1E) may be interconnected to various devices such as a videophone 130, other digital phones 18, set-top devices (not shown), computers 14, and/or other devices 15, 16 comprising the customer premise equipment 10." Figure 1C; Figure 1E; Col. 5, ll. 53-57.
Claim 2	The network device of claim 1, wherein the plurality of communication interfaces further includes a video streaming device interface (audio/video interface 120).	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152
		bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.
Claim 3	The network device of claim 1, wherein the broadband network interface terminates a broadband network link that joins a customer premises to a packet carrier network.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.
Claim 4	The network device of claim 1, wherein the instructions further cause the network device to route IP data between the computer data interface and the broadband network interface.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.
Claim 5	The network device of claim 1, wherein the network device is contained in a single physical enclosure.	ISD/IRG 22 is contained in a single physical enclosure. Figure 1A.
Claim 7	The network device of ~~claim 1, wherein~~ the storage medium during use further stores call routing tables, and the instructions further cause the network device to ~~perform call routing for telephone calls~~ that use the telephone line interface.	"The ISD/IRG 22 performs ~~intelligent~~ multiplexing, dynamic bandwidth allocation, and routing of voice and data and may also include advance signal processing for enabling voice activated ~~commands~~." Col. 12, ll. 52-55.

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	"The ISD/IRG 22 performs intelligent multiplexing, dynamic bandwidth allocation, and routing of voice and data and may also include advance signal processing for enabling voice activated commands." Col. 12, ll. 52-55.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (NSP 36), the system management platform collecting call log data from a plurality of network devices ; and	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. "In either FIG. 1A or FIG. 1C, the NSP 36 may provide a massive cache storage for various information that may be provided across the SONET net 42 to the FMP 32 of C-FMP 32-1 and out to the ISD 22 (FIG. 1A) or residential gateways 22-1 or 22-2 (FIG. 1-B). The NSP 36 and the FMP 32 or C-FMP 32-1 may collectively define an access network server complex 38. The NSP 36 may be interconnected with multiple FMPs or C-FMP's 32, 32-1. Furthermore, each FMP/C-FMP 32, 32-1 may interconnect with one or more ISDs 22 or IRGs. The NSP 36 may be located anywhere but is preferably located in a point-of-presence (POP) facility. The NSP 36 may further act as a gateway to, for example, any number of additional services." Col. 5, ll. 40-52.
	distributing the plurality of network devices (ISD/IRG 22) that each include a telephone line interface (residential interface 115, cordless phone interface 123, conventional analog lines 505),	The IRG connects with analog telephones 15. "The IRG 22 may connect with a variety of devices including analog and digital voice telephones 15." Figure 1E; Figure 2; Figure 5, Col. 7, ll. 33-35. The IRG connects with personal computers 14. "personal computers utilizing

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152
	a computer data interface (audio/video interface 120, Ethernet connections 501), a broadband network interface terminating a link from the shared packet network (cable/xDSL modem 114)	cable modem bandwidth Internet services are typically coupled to IRG 22 to coaxial cable lines run within the home. Alternatively, services are provided via an Ethernet interface 119 or other high bandwidth interface." Figure 1E; Figure 2; Figure 5, Col. 7, ll. 49-53. The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.
	a processor (central processing unit 102);	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (memory of ISD/IRG 22),	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (calls routed by FMP/C-FMP 32 to coordinate the flow of data packets). and to send call log data to the system management platform (NSP 36).	"Referring to FIG. 4A, the FMP/C-FMP 32 may coordinate the flow of data packets." Col. 11, ll. 6-7. "The request is then forwarded to the NSP 36 where it may be logged with any appropriate billing information. The NSP 36 may be configured to include a plurality of program tables mapping PID values and/or values output by the program guide from the settop 131 with identifying information to match the program requested with programs PIDs being broadcast. Thereafter the program is downloaded via the FMP/C-FMP 32 to the ISD/IRG 22 to the settop 131. In this manner a log of requests can be recorded and billing records maintained." Col. 22, l. 65 – Col. 23, l. 7. In addition, Gerszberg incorporates U.S. application Ser. No. 09/224,282, entitled "A Network Server Platform for Providing Integrated Billing for CATV, Internet, Telephony and Enhanced Bandwidth Services" of Gerszberg et al. by reference.

'519 Claim	'519 Claim Limitations	Gerszberg U.S. Patent 6,510,152
		At Paragraph 0058, this reference states that the IRG periodically reports call log data to the NSP.
Claim 14	The method of claim 13, wherein for each device the broadband network interface terminates a link from the shared packet network.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.
Claim 17	The method of claim 13, wherein the shared packet network uses IP protocols.	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.
Claim 18	The method of claim 13, wherein the shared packet network uses ATM protocols.	"The ISD 22 and the telephone central or local office 34 may communicate with each other using, for example, framed, time division, frequency-division, synchronous, asynchronous and/or spread spectrum formats, but in exemplary embodiments uses DSL modem technology. The central office 34 preferably includes a facilities management platform (FMP) 32 for processing data exchanged across the customer connection 30. The FMP 32 may be configured to separate the plain old telephone service (POTS) from the remainder of the data on the customer connection 30 using, for example, a tethered virtual radio channel

'519 Claim	'519 Claim Limitations	Gerszberg U.S. Patent 6,510,152
		(TVRC) modem (shown in FIG. 4A). The remaining data may be output to a high speed backbone network (e.g., a fiber-optic network) such as an asynchronous transfer mode (ATM) switching network." Col. 4, ll. 44-58.
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface (audio/video interface 120).	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.

S19 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	**SIP user agent:** Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	**Base System**— Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet

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			further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Gerszberg to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (NSP 36), the system management platform collecting call log data from a plurality of network devices ; and	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. "In either FIG. 1A or FIG. 1C, the NSP 36 may provide a massive cache storage for various information that may be provided across the SONET net 42 to the FMP 32 of C-FMP	

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 9	A network device (ISD/IRG 22) comprising: a broadband network interface (cable/xDSL modem 114); a plurality of communication interfaces, including a telephone line interface (residential interface 115, cordless phone interface 123, conventional analog lines 505) and a computer data interface (audio/video interface 120, Ethernet connections 501);	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. The IRG connects with analog telephones 15. "The IRG 22 may connect with a variety of devices including analog and digital voice telephones 15." Figure 1E; Figure 2; Figure 5, Col. 5, ll. 33-35. The IRG connects with personal computers 14. "personal computers utilizing cable modem bandwidth Internet services are typically coupled to IRG 22 to coaxial cable lines run within the home. Alternatively, services are provided via an Ethernet interface 119 or other high bandwidth interface." Figure 1E; Figure 2; Figure 5, Col. 7, ll. 49-53. The IRG aggregates the traffic from the attached devices onto	

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
		a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
	a processor (microprocessor of host computer 106);	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (processor 102 is configured by a call processing application)	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (processor 102 is configured by a call processing application), and the instructions further causing the network device to implement a SIP proxy server that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	**SIP user agents and SIP proxy server:** Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	Base System— Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the

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'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
			remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Gerszberg to participate in SIP-based telephony systems.

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'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	ISD/IRG 22 is contained in a single physical enclosure.	

'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
		elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (memory of ISD/IRG 22),	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (calls routed by FMP/C-FMP 32 to coordinate the flow of data packets). and to send call log data to the system management platform (NSP 36).	"Referring to FIG. 4A, the FMP/C-FMP 32 may coordinate the flow of data packets." Col. 11, ll. 6-7. "The request is then forwarded to the NSP 36 where it may be logged with any appropriate billing information. The NSP 36 may be configured to include a plurality of program tables mapping PID values and/or values output by the program guide from the settop 131 with identifying information to match the program requested with programs PIDs being broadcast. Thereafter the program is downloaded via the FMP/C-FMP 32 to the ISD/IRG 22 to the settop 131. In this manner a log of requests can be recorded and billing records maintained." Col. 22, l. 65 – Col. 23, l. 7.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	**Base System**— Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications.

'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
			For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Gerszberg to participate in SIP-based telephony systems.

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	**Base System**— Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Gerszberg to participate in SIP-based telephony systems.

Gerszberg in view of Wengrovitz

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	**SIP user agent:** Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	**Base System**—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive

Gerszberg in view of Wengrovitz

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (NSP 36), the system management platform collecting call log data from a plurality of network devices ; and	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. "In either FIG. 1A or FIG. 1C, the NSP 36 may provide a	

'519 Claim	Claim Limitations	Gerszberg US5Patent6,510,152	Secondary References
Claim 9	A network device (ISD/IRG 22) comprising: a broadband network interface (cable/xDSL modem 114); a plurality of communication interfaces, including a telephone line interface (residential interface 115, cordless phone interface 123, conventional analog lines 505) and a computer data interface (audio/video interface 120, Ethernet connections 501);	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. The IRG connects with analog telephones 15. "The IRG 22 may connect with a variety of devices including analog and digital voice telephones 15." Figure 1E; Figure 2; Figure 5, Col. 5, ll. 33-35. The IRG connects with personal computers 14. "personal computers utilizing cable modem bandwidth Internet services are typically coupled to IRG 22 to coaxial cable lines run within the home. Alternatively, services are provided via an Ethernet interface 119 or other high bandwidth interface." Figure 1E; Figure 2; Figure 5, Col. 7, ll. 49-53. The IRG aggregates the traffic from the attached devices onto	

'519 Claim	Claim Limitations	Gerszberg US5Patent6,510,152	Secondary References
		a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
	a processor (microprocessor of host computer 106);	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (processor 102 is configured by a call processing application)	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (processor 102 is configured by a call processing application), and the instructions further causing the network device to implement a SIP proxy server that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	SIP user agents and SIP proxy server: Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	Base System—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			(PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical	ISD/IRG 22 is contained in a single physical enclosure.	

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
	enclosure.		

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
	a processor (central processing unit 102);	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (memory of ISD/IRG 22),	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (calls routed by FMP/C-FMP 32 to coordinate the flow of data packets). and to send call log data to the system management platform (NSP 36).	"Referring to FIG. 4A, the FMP/C-FMP 32 may coordinate the flow of data packets." Col. 11, ll. 6-7. "The request is then forwarded to the NSP 36 where it may be logged with any appropriate billing information. The NSP 36 may be configured to include a plurality of program tables mapping PID values and/or values output by the program guide from the settop 131 with identifying information to match the program requested with programs PIDs being broadcast. Thereafter the program is downloaded via the FMP/C-FMP 32 to the ISD/IRG 22 to the settop 131. In this manner a log of requests can be recorded and billing records maintained." Col. 22, l. 65 – Col. 23, l. 7. In addition, Gerszberg incorporates U.S. application Ser. No. 09/224,282, entitled "A Network Server Platform for Providing Integrated Billing for CATV, Internet, Telephony and Enhanced Bandwidth Services" of Gerszberg et al. by reference. At Paragraph 0058, this reference states that the IRG periodically reports call log data to the NSP.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	Base System—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (e.g., IRG 22). Known Technique— A person having ordinary

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			skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack."

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	**Base System**—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication

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'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
			network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.

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'519 Claim	Claim Limitations	Gerszberg US Patent 6,510,152	Secondary References
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	SIP user agent: Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	**Base System**—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in

'519 Claim	Claim Limitations	Gerszberg (U.S. Patent 6,510,152)	Secondary References
			legacy PSTN voice and facsimile telephony applications." Girard, Page 1. **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (NSP 36), the system management platform collecting call log data from a plurality of network devices ; and	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. "In either FIG. 1A or FIG. 1C, the NSP 36 may provide a massive cache storage for various information that may be provided across the SONET net 42 to the FMP 32 of C-FMP	

'519 Claim	Claim Limitations	Gerszberg (U.S. Patent 6,510,152)	Secondary References
Claim 9	A network device **(ISD/IRG 22)** comprising: a broadband network interface **(cable/xDSL modem 114)**; a plurality of communication interfaces, including a telephone line interface **(residential interface 115, cordless phone interface 123, conventional analog lines 505)** and a computer data interface **(audio/video interface 120, Ethernet connections 501)**;	Gerszberg teaches a residence gateway which may be an integrated residence gateway (IRG) disposed near the customer's premises for multiplexing and coordinating many digital services onto a single twisted-pair line or coaxial cable (or both). "[A]n intelligent services director (ISD) 22 may be coupled to a telephone central office 34 via a twisted-pair wire, hybrid fiber interconnection, wireless and/or other customer connection 30, a connector block 26, and/or a main distribution frame (MDF) 28. Referring briefly to FIG. 1B, and according to the present invention, the ISD 22 is replaced by either a residential gateway 22-2 (when an interexchange carrier partners with a cable television service provider) or an integrated residential gateway 22-1 (when an interexchange carrier is integrated with the cable television service provider." Figure 1; Col. 4, ll. 22-32. The IRG connects with analog telephones 15. "The IRG 22 may connect with a variety of devices including analog and digital voice telephones 15." Figure 1E; Figure 2; Figure 5, Col. 5, ll. 33-35. . The IRG connects with personal computers 14. "personal computers utilizing cable modem bandwidth Internet services are typically coupled to IRG 22 to coaxial cable lines run within the home. Alternatively, services are provided via an Ethernet interface 119 or other high bandwidth interface." Figure 1E; Figure 2; Figure 5, Col. 7, ll. 49-53. The IRG aggregates the traffic from the attached devices onto	

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'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
		a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
	a processor (microprocessor of host computer 106);	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (processor 102 is configured by a call processing application)	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (processor 102 is configured by a call processing application), and the instructions further causing the network device to implement a SIP proxy server that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	SIP user agents and SIP proxy server: Processor 102 is configured to act as a call processor. (FIGURE 5; 15/41). "The ISD/IRG 22 may execute any number of additional telephony functions using known techniques such as Packetization of voice for all telephone calls, Tip/Ring Borscht functions, default to Central Office Battery/Tip/Ring to provide lifeline service during power failure, overvoltage Protection, ringing, supervision, answer and incoming call/ringing supervision, generation of call progress tones (e.g., dial tone, busy, ringback, invalid number, etc.), various coding such as 7 KHz G.722 coding for Electra called parties, 3.3. KHz mu-law coding for non-ISD enabled parties." Figure 5; Col. 15, ll. 5-15.	Base System—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS.

Gerszberg in view of Girard-SIP

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	The IRG aggregates the traffic from the attached devices onto a single broadband interface 114. "In exemplary embodiments, the ISD/IRG 22 multiplexes traffic from the various components of the PDN 500 (e.g., Ethernet, Screen Phone, Tip/Ring, ISDN, coaxial house cable) either between other devices on the PDN and/or onto DSL/cable modem 114 for transport over loop twisted pair to the Central Office or coax toward the cable television headend." Figure 2; Figure 5; Col. 14, ll. 52-58.	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102, a DRAM 103, an SRAM 104, a ROM 105 and/or an Internet protocol (IP) bridge router 106 connecting the controller 100 to a system bus 111. The system bus 111 may be connected with a variety of network interface devices 110. The network interface devices 110 may be variously configured to include an integrated services digital network (ISDN) interface 113, an Ethernet interface 119 (e.g., for 10 Base T, 100 Base T, etc.), an IEEE 1394 "fire wire" interface 112 (e.g., for a digital videodisc device (DVD)), a xDSL/cable modem interface 114 (e.g., a TVRC and/or cable modem), a residential interface 115, (e.g., standard POTS phone systems such as tip ring), a business interface 116 (e.g., a T1 line or slower data speed and/or PABX interface), a radio frequency (RF) audio/video interface 120 . . ." Col. 7, l. 64 – Col. 8, l. 13.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	ISD/IRG 22 is contained in a single physical enclosure.	

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		elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (memory of ISD/IRG 22),	"As shown in FIG. 2, in some embodiments the IRG 22 may include a controller 100 which may have any of a variety of elements such as a central processing unit 102." Figure 2; Col. 7, ll. 64-66.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (calls routed by FMP/C-FMP 32 to coordinate the flow of data packets). and to send call log data to the system management platform (NSP 36).	"Referring to FIG. 4A, the FMP/C-FMP 32 may coordinate the flow of data packets." Col. 11, ll. 6-7. "The request is then forwarded to the NSP 36 where it may be logged with any appropriate billing information. The NSP 36 may be configured to include a plurality of program tables mapping PID values and/or values output by the program guide from the settop 131 with identifying information to match the program requested with programs PIDs being broadcast. Thereafter the program is downloaded via the FMP/C-FMP 32 to the ISD/IRG 22 to the settop 131. In this manner a log of requests can be recorded and billing records maintained." Col. 22, l. 65 – Col. 23, l. 7. In addition, Gerszberg incorporates U.S. application Ser. No. 09/224,282, entitled "A Network Server Platform for Providing Integrated Billing for CATV, Internet, Telephony and Enhanced Bandwidth Services" of Gerszberg et al. by reference. At Paragraph 0058, this reference states that the IRG periodically reports call log data to the NSP.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	Base System—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an

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			Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to

'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	Processor 102 is configured to mediate communications. "The processor 102 in the ISD/IRG 22 may be configured to discriminate between the various forms of traffic and to route this traffic to an appropriate device." Figure 5; Col. 17, ll. 25-27.	**Base System**—Gerszberg discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, IRG 22). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2;

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'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
			Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Gerszberg to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Gerszberg* to participate in SIP-based telephony systems.

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'519 Claim	Claim Limitations	Gerszberg U.S. Patent 6,510,152	Secondary References
Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line interface.	"The ISD/IRG 22 performs intelligent multiplexing, dynamic bandwidth allocation, and routing of voice and data and may also include advance signal processing for enabling voice activated commands." Col. 12, ll. 52-55.	To the extent that Gerszberg does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid the need for call routing through the private branch exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Gerszberg to efficiently route telephone calls, for example.
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	"The ISD/IRG 22 performs intelligent multiplexing, dynamic bandwidth allocation, and routing of voice and data and may also include advance signal processing for enabling voice activated commands." Col. 12, ll. 52-55.	To the extent that Gerszberg does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in

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			each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid the need for call routing through the private branch exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Gerszberg to efficiently route telephone calls, for example.

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,074,461
Claim 1	A network device (set-top box 200, 300) comprising: a plurality of communication interfaces, including a telephone line interface (telephone modem adapter 320 providing interface to telephone 204), a computer data interface (media adapter 318 providing a computer data interface to set-top box 202, 300. Alternatively, expansion bus interface 322 provides a connection for a keyboard and mouse adapter 324 and an infrared adapter 326 to receive computer data from, for example, a keyboard or mouse.), and a broadband network interface (Local area network adapter 310 provides broadband connection to proxy server 218 or the interface to the cable network);	"Set-top device 300, in a preferred embodiment, employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures, such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used." Figure 3; Col. 5, l. 65 - col. 6, l. 5. Col. 6, ll. 50-54; Col. 6, l. 63 - Col. 7, l. 1. See also Ethernet and twisted pair connections in Figure 4, Col. 7, ll. 53-57. "Local area network (LAN) adapter 310 connects to PCI local bus 306 and provides a connection, such as an ethernet connection, to a proxy server, such as proxy server 110 in FIG. 1." Col. 6, ll. 9-13. "A telephone/modem adapter 320 is also provided in which voice calls and data from a PSTN may be facilitated." Col. 6, ll. 61-62.
	a processor (processor 302 in set-top box 202, 300);	"PCI bridge 308 also may include an integrated memory controller and cache memory for processor 302." Col. 6, ll. 5 - 6.
	a machine-readable storage medium (main memory 304 or cache memory within PCI bridge 308, both in set top box 202, 300) which during use stores	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5-8.
	a call processing application (SIP application 400/402) and	Call Processing Application: "SIP application 400, in these examples, is implemented in a set-top device, as shown in set-top device 300 in FIG. 3. SIP application 400, in these examples, is employed to provide multimedia services to a user through a connection to a server." Col. 7, ll. 44-48. See also Col. 8, ll. 10-15; Col. 8, ll. 60-63.
	service profiles (service profiles are stored in connectors with subscriber registration described in conjunction with Figure 5),	Service Profiles: Turning next to FIG. 5, a flowchart of a process for registering a subscriber is depicted in accordance with a preferred embodiment of the present invention. The process is used in a set-top device to register a subscriber with a proxy server. In these examples, the process is implemented using instructions executed by a processor in the set-top device. Such a registration allows for subscriber services to be directed to the subscriber at the location of the set-top device. Col. 8, ll. 24-30.

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	and which stores executable instructions to mediate communications between the plurality of communication interfaces (mediating communications described with respect to Figure 6),	"This request may take different forms, such as, for example, a call from a calling party, a message, or a Web page being pushed to the subscriber. The type of media being used at the set-top device is identified (step 602). Step 602 may be accomplished in a number of ways, such as for example, polling for active data streams being sent to devices attached to the set-top device. A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen. Thereafter, options are presented to the subscriber using a media type, which matches the media type in the request (step 606). A determination is made as to whether a subscriber selection has been received (step 608). A check is made as to whether a user input, such as, for example, the depressing of a selected key, has occurred. If a subscriber selection is not received, a determination is made as to whether a timeout has occurred (step 610). A timer function may be checked to see if time has expired to identify a timeout. If a timeout has not occurred, the process returns to step 608. When a subscriber selection is received in step 608, the selected action is performed (step 612) with the process terminating thereafter." Col. 8, l. 67 - col. 9, l. 25.
	the instructions causing the network device to detect network signaling events or trigger points in a telephone call (A determination is made as to whether the subscriber can be alerted using the identified media (step 604)) and	"A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen." Col. 9, ll. 7-10.
	invoke the call processing application in response to the detected network signaling events or trigger points (SIP application 400/402 invoked in response to detected event),	"In this example, if the subscriber decides to answer the call, the call may be routed to the set-top device, and the call may be facilitated through the devices connected to the set-top device. For example, the caller's voice may be presented to the subscriber through speakers in the television, and the subscriber may talk to the caller through a microphone located in the remote control. If the subscriber decides to send the call to voice mail, the set-top device may accept the call and route it to a voice mail system in the set-top device or may send a message to the proxy server to redirect the call to a voice mail service for the subscriber. If the subscriber decides to forward the call, menu 708 is displayed within display 700 in FIG. 7B. In this example, the subscriber may forward the call to a home phone

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		or to a mobile phone. Depending on the selection made by the subscriber, the set-top device will send the appropriate SIP messages to have the call forwarded to the appropriate number. If the subscriber decides to cancel the call, the call will not be answered and may be terminated by the set-top device." Col. 10, ll. 11-13.
	the call processing application operating according to parameters defined in the service profiles (SIP application 400/402 operates according to user parameters)	"With reference now to FIG. 8, a flowchart of a process for call screening is depicted in accordance with a preferred embodiment of the present invention. The processes in FIG. 8 may be implemented in a SIP control component, such as SIP control 402 in FIG. 4. The process begins by receiving a request to connect a call to the subscriber (step 800). Thereafter, call information and call handling options are presented to the subscriber (step 802). These options may be presented in a number of ways. In the depicted example in FIG. 7A and FIG. 7B, the options are presented in a menu on a display. Alternatively, the options may be presented using audible voice prompts played through speaker, such as those in a television, stereo, or set-top device. Thereafter, subscriber input is received (step 804). This input may be received by depressing buttons on a remote control. In these examples, the handling of the call in response to subscriber input results in the set-top device sending the appropriate SIP messages to a proxy server. If the subscriber selection is voice mail, the call is routed to a voice mail system (step 806) with the process terminating thereafter. If the subscriber selection is to terminate the call, the call remains unanswered (step 808) with the process terminating thereafter." Col. 10, ll. 19-41.
	wherein the network device consists of one or more customer premise equipment modules (set-top box 202).	Set-top box 202, 300 is located within a home 200, as per Figures 1 and 2, for example. Col. 8, l. 60-Col. 9, l. 6..
Claim 2	The network device of claim 1, wherein the plurality of communication interfaces further includes a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services

'519 Claim	Claim Limitations	Janning US Patent 7,024,461
		digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.
Claim 3	The network device of claim 1, wherein the broadband network interface terminates a broadband network link that joins a customer premises to a packet carrier network.	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.
Claim 4	The network device of claim 1, wherein the instructions further cause the network device to route IP data between the computer data interface and the broadband network interface.	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.
Claim 5	The network device of claim 1, wherein the network device is contained in a single physical enclosure.	Set-top box 202 is contained in a single physical enclosure.
Claim 6	The network device of claim 1, wherein the instructions further cause the network	"In these examples, the process is implemented using instructions executed by a

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	device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	processor in the set-top device. Such a registration allows for subscriber services to be directed to the subscriber at the location of the set-top device. For example, telephone calls may be directed to the subscriber using the subscriber's personal number. This registration process involves the presently available register method in SIP, which allows a user agent to register with a server by sending a register request." Col. 8, ll. 24-29.
Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables (subscriber selection information), and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line interface.	"Turning next to FIG. 6, a flowchart of a process to handle requests received by a set-top device to route calls to a subscriber is depicted in accordance with a preferred embodiment of the present invention. In the depicted example, these processes are implemented as instructions executed by a processor, such as processor 302 in FIG. 3. The process begins with the set-top device receiving a request (step 600). This request may take different forms, such as, for example, a call from a calling party, a message, or a Web page being pushed to the subscriber. The type of media being used at the set-top device is identified (step 602). Step 602 may be accomplished in a number of ways, such as for example, polling for active data streams being sent to devices attached to the set-top device. A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen. Thereafter, options are presented to the subscriber using a media type, which matches the media type in the request (step 606). A determination is made as to whether a subscriber selection has been received (step 608). A check is made as to whether a user input, such as, for example, the depressing of a selected key, has occurred. If a subscriber selection is not received, a determination is made as to whether a timeout has occurred (step 610). A timer function may be checked to see if time has expired to identify a timeout. If a timeout has not occurred, the process returns to step 608. When a subscriber selection is received in step 608, the selected action is performed (step 612) with the process terminating thereafter." Col. 8, l. 67 - col. 9, l. 25.

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Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables (subscriber selection information), and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	Turning next to FIG. 6, a flowchart of a process to handle requests received by a set-top device to route calls to a subscriber is depicted in accordance with a preferred embodiment of the present invention. In the depicted example, these processes are implemented as instructions executed by a processor, such as processor 302 in FIG. 3. The process begins with the set-top device receiving a request (step 600). This request may take different forms, such as, for example, a call from a calling party, a message, or a Web page being pushed to the subscriber. The type of media being used at the set-top device is identified (step 602). Step 602 may be accomplished in a number of ways, such as for example, polling for active data streams being sent to devices attached to the set-top device. A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen. Thereafter, options are presented to the subscriber using a media type, which matches the media type in the request (step 606). A determination is made as to whether a subscriber selection has been received (step 608). A check is made as to whether a user input, such as, for example, the depressing of a selected key, has occurred. If a subscriber selection is not received, a determination is made as to whether a timeout has occurred (step 610). A timer function may be checked to see if time has expired to identify a timeout. If a timeout has not occurred, the process returns to step 608. When a subscriber selection is received in step 608, the selected action is performed (step 612) with the process terminating thereafter." Col. 8, l. 67 - col. 9, l. 25.
Claim 9	A network device (set-top box 200, 300) comprising: a broadband network interface (Local area network adapter 310 provides broadband connection to proxy server 218 or the interface to the cable network); a plurality of communication interfaces, including a telephone line interface (telephone modem adapter 320 providing interface to telephone 204) and a computer data interface (media adapter 318 providing a computer data interface to set-top box 202, 300. Alternatively, expansion bus interface 322 provides a connection for a keyboard and mouse adapter 324 and an infrared adapter	"Set-top device 300, in a preferred embodiment, employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures, such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used." Figure 3; Col. 5, l. 65 - col. 6, l. 5. Col. 6, ll. 50-54; Col. 6, l. 63 - Col. 7, l. 1. See also Ethernet and twisted pair

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	326 to receive computer data from, for example, a keyboard or mouse.);	connections in Figure 4, Col. 7, ll. 53-57. "Local area network (LAN) adapter 310 connects to PCI local bus 306 and provides a connection, such as an ethernet connection, to a proxy server, such as proxy server 110 in FIG. 1." Col. 6, ll. 9-13. "A telephone/modem adapter 320 is also provided in which voice calls and data from a PSTN may be facilitated." Col. 6, ll. 61-62.
	a processor (processor 302 in set-top box 202, 300);	"PCI bridge 308 also may include an integrated memory controller and cache memory for processor 302." Col. 6, ll. 5 - 6.
	a machine-readable storage medium that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (main memory 304 or cache memory within PCI bridge 308, both in set top box 202, 300)	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5-8.
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (SIP application 400), and the instructions further causing the network device to implement a SIP proxy server (SIP control 402/Proxy server 218) that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	SIP user agent: "SIP application 400, in these examples, is implemented in a set-top device, as shown in set-top device 300 in FIG. 3. SIP application 400, in these examples, is employed to provide multimedia services to a user through a connection to a server." Col. 7, ll. 44-48. See also Col. 8, ll. 10-15; Col. 8, ll. 60-63. SIP proxy server: "SIP control 402 includes the appropriate interfaces, such as, for example, application programming interfaces (APIs), to communicate with the various drivers in SIP application 400. The actual drivers employed depend on the hardware used to implement SIP application 400. More specifically, SIP control 402 exchanges SIP messages with a source, such as a proxy server, to setup a session. The session may involve, for example, a telephone call, a video, or controlling various devices." Col. 8, ll. 6-14.
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate

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		with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 10, ll. 11-13.
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	Set-top box 202 is contained in a single physical enclosure.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (proxy server 218), the system management platform collecting call log data from a plurality of network devices ; and	"In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Chung Secondary References
		presented in a number of ways. In the depicted example in FIG. 7A and FIG. 7B, the options are presented in a menu on a display. Alternatively, the options may be presented using audible voice prompts played through speaker, such as those in a television, stereo, or set-top device. Thereafter, subscriber input is received (step 804). This input may be received by depressing buttons on a remote control. In these examples, the handling of the call in response to subscriber input results in the set-top device sending the appropriate SIP messages to a proxy server. If the subscriber selection is voice mail, the call is routed to a voice mail system (step 806) with the process terminating thereafter. If the subscriber selection is to terminate the call, the call remains unanswered (step 808) with the process terminating thereafter." Col. 10, ll. 19-41.	
	wherein the network device consists of one or more customer premise equipment modules (set-top box 202).	Set-top box 202, 300 is located within a home 200, as per Figures 1 and 2, for example. Col. 8, l. 60-Col. 9, l. 6..	
Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables (subscriber selection information), and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line interface.	"Turning next to FIG. 6, a flowchart of a process to handle requests received by a set-top device to route calls to a subscriber is depicted in accordance with a preferred embodiment of the present invention. In the depicted example, these processes are implemented as instructions executed by a processor, such as processor 302 in FIG. 3. The process begins with the set-top device receiving a request (step 600). This request may take different forms, such as, for example, a call from a calling party, a message, or a Web page being pushed to the subscriber. The type of media being used at the set-top device is identified (step 602). Step 602 may be accomplished in a number of ways, such as for example, polling for active data streams being sent to devices attached to the set-top device.	To the extent that Janning does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid the need for call routing through the private branch

'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen. Thereafter, options are presented to the subscriber using a media type, which matches the media type in the request (step 606). A determination is made as to whether a subscriber selection has been received (step 608). A check is made as to whether a user input, such as, for example, the depressing of a selected key, has occurred. If a subscriber selection is not received, a determination is made as to whether a timeout has occurred (step 610). A timer function may be checked to see if time has expired to identify a timeout. If a timeout has not occurred, the process returns to step 608. When a subscriber selection is received in step 608, the selected action is performed (step 612) with the process terminating thereafter." Col. 8, l. 67 - col. 9, l. 25.	exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Janning to efficiently route telephone calls, for example.
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables (subscriber selection information), and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	Turning next to FIG. 6, a flowchart of a process to handle requests received by a set-top device to route calls to a subscriber is depicted in accordance with a preferred embodiment of the present invention. In the depicted example, these processes are implemented as instructions executed by a processor, such as processor 302 in FIG. 3. The process begins with the set-top device receiving a request (step 600). This request may take different forms, such as, for example, a call from a calling party, a message, or a Web page being pushed to the subscriber. The type of media being used at the set-top device is identified (step 602). Step 602 may be accomplished in a number of ways, such as for example, polling for active data streams being sent to devices attached to the set-top device.	To the extent that Janning does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid the need for call routing through the private branch

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		"A determination is made as to whether the subscriber can be alerted using the identified media (step 604). For example, if the subscriber is watching the television, the subscriber may be alerted using a message on the screen and/or by an audio prompt to obtain the subscriber's attention in case the subscriber is not looking at the television screen. Thereafter, options are presented to the subscriber using a media type, which matches the media type in the request (step 606). A determination is made as to whether a subscriber selection has been received (step 608). A check is made as to whether a user input, such as, for example, the depressing of a selected key, has occurred. If a subscriber selection is not received, a determination is made as to whether a timeout has occurred (step 610). A timer function may be checked to see if time has expired to identify a timeout. If a timeout has not occurred, the process returns to step 608. When a subscriber selection is received in step 608, the selected action is performed (step 612) with the process terminating thereafter." Col. 8, l. 67 - col. 9, l. 25.	exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Janning to efficiently route telephone calls, for example.

Janning in view of Inbar

'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (proxy server 218), the system management platform collecting call log data from a plurality of network devices ; and	"In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	**Base System**— Janning discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, set-top box 202). **Known Technique**—A person having ordinary skill in the art in 2001 would have been well-aware of system management platform technology. Inbar, for example, describes a system management platform collecting call log data from a plurality of network devices. For example, Inbar states: "The IPCenter preferably records usage and billing information, and, as described above, reports billing information to the Master-Server, or to a separate billing unit associated with the master server. In addition to usage and billing information, the IPCenter may report Quality-of-Service (QoS) information, and in some cases connectivity monitoring information, status information of connected devices and other information as may be defined." Figure 1; Col. 8, ll. 54-62. "The system preferably further comprises a billing mechanism for accumulating a transaction log at the subscriber end and retrieving data of said log to the master server." Col. 4, ll. 16-19. **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Janning to include a system management platform, for example, to maintain these records in a centralized system and facilitate billing: "all of these services

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
			have to be integrated with each other, with a central control and with billing servers and other functions." Col. 1, ll. 41-43.
	distributing the plurality of network devices (set-top box 202) that each include a telephone line interface (telephone modem adapter 320 providing interface to telephone 204), a computer data interface (media adapter 318 providing a computer data interface to set-top box 202, 300. Alternatively, expansion bus interface 322 provides a connection for a keyboard and mouse adapter 324 and an infrared adapter 326 to receive computer data from, for example, a keyboard or mouse), a broadband network interface terminating a link from the shared packet network (local area network adapter 310 provides broadband connection to proxy server 218 or the interface to the cable network)	"Set-top device 300, in a preferred embodiment, employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures, such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used." Figure 3; Col. 5, l. 65 - col. 6, l. 5. Col. 6, ll. 50-54; Col. 6, l. 63 - Col. 7, l. 1. See also Ethernet and twisted pair connections in Figure 4, Col. 7, ll. 53-57. "Local area network (LAN) adapter 310 connects to PCI local bus 306 and provides a connection, such as an ethernet connection, to a proxy server, such as proxy server 110 in FIG. 1." Col. 6, ll. 9-13. "A telephone/modem adapter 320 is also provided in which voice calls and data from a PSTN may be facilitated." Col. 6, ll. 61-62.	
	a processor (processor 302 in set-top box 202, 300);	"PCI bridge 308 also may include an integrated memory controller and cache memory for processor 302." Col. 6, ll. 5 - 6.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (main memory 304 or cache memory within PCI bridge 308, both in set top	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5- 8.	

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
	box 202, 300),		
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (SIP application 400/402). and to send call log data to the system management platform (proxy server 218).	System management platform: SIP application 400 sends call log data to proxy server 218. Although not depicted, proxy server 218 may serve more than one SIP application 400. "SIP transparently supports name mapping and redirection services, allowing the implementation of ISDN and Intelligent Network telephony subscriber services. These facilities also enable personal mobility. Personal mobility is the ability of end users to originate calls, receive calls, and access subscribed telecommunication services on any terminal and in any location." Col. 4, ll. 23-29. "In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	Base System— Janning discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, set-top box 202). Known Technique—A person having ordinary skill in the art in 2001 would have been well-aware of system management platform technology. Inbar, for example, describes a system management platform collecting call log data from a plurality of network devices. For example, Inbar states: "The IPCenter preferably records usage and billing information, and, as described above, reports billing information to the Master-Server, or to a separate billing unit associated with the master server. In addition to usage and billing information, the IPCenter may report Quality-of-Service (QoS) information, and in some cases connectivity monitoring information, status information of connected devices and other information as may be defined." Figure 1; Col. 8, ll. 54-62. "The system preferably further comprises a billing mechanism for accumulating a transaction log at the subscriber end and retrieving data of said log to the master server." Col. 4, ll. 16-19. Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Janning to include a system management platform, for example, to maintain these records in a centralized

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
			system and facilitate billing: "all of these services have to be integrated with each other, with a central control and with billing servers and other functions." Col. 1, ll. 41-43.
Claim 14	The method of claim 13, wherein for each device the broadband network interface terminates a link from the shared packet network.	"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"SIP control 402 includes the appropriate interfaces, such as, for example, application programming interfaces (APIs), to communicate with the various drivers in SIP application 400. The actual drivers employed depend on the hardware used to implement SIP application 400. More specifically, SIP control 402 exchanges SIP messages with a source, such as a proxy server, to setup a session. The session may involve, for	

'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary Reference
		example, a telephone call, a video, or controlling various devices." Col. 8, ll. 6-14.	
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	"SIP control 402 includes the appropriate interfaces, such as, for example, application programming interfaces (APIs), to communicate with the various drivers in SIP application 400. The actual drivers employed depend on the hardware used to implement SIP application 400. More specifically, SIP control 402 exchanges SIP messages with a source, such as a proxy server, to setup a session. The session may involve, for example, a telephone call, a video, or controlling various devices." Col. 8, ll. 6-14.	
Claim 17	The method of claim 13, wherein the shared packet network uses IP protocols.	"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	
Claim 18	The method of claim 13, wherein the shared	"A connection from home 102 to network 108 is present. In	

'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary Reference
	packet network uses ATM protocols.	this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.	

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		- 6.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (main memory 304 or cache memory within PCI bridge 308, both in set top box 202, 300),	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5- 8.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (SIP application 400/402). and to send call log data to the system management platform (proxy server 218).	System management platform: SIP application 400 sends call log data to proxy server 218. Although not depicted, proxy server 218 may serve more than one SIP application 400. "SIP transparently supports name mapping and redirection services, allowing the implementation of ISDN and Intelligent Network telephony subscriber services. These facilities also enable personal mobility. Personal mobility is the ability of end users to originate calls, receive calls, and access subscribed telecommunication services on any terminal and in any location." Col. 4, ll. 23-29. "In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	
Claim 18	The method of claim 13, wherein the shared	"A connection from home 102 to network 108 is present. In	To the extent that Janning does not explicitly teach

Janning in view of Inbar and further in view of Osterhout

'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
	packet network uses ATM protocols.	this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	ATM protocols, the use of ATM protocols in network devices was well known in the art by 2001. For example, Osterhout (U.S. Patent 7,197,029) teaches ATM protocols. Col. 6, ll. 1-5. Therefore the use of ATM protocols would have been a simple design choice to one of ordinary skill in the art.
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.	

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'319 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (proxy server 218), the system management platform collecting call log data from a plurality of network devices ; and	"In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	Base System— Janning discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, set-top box 202). Known Technique—A person having ordinary skill in the art in 2001 would have been well-aware of system management platform technology. Kung, for example, describes a system management platform collecting call log data from a plurality of network devices. For example, Kung teaches an IP central station 200 that stores a call log: "The present invention may include an activity log that may have user proactive bill management capability and be used in the aforementioned broadband communication system. The activity log may log, for example, incoming calls directory numbers (DNs) and outgoing call DNs in a database. The database containing the activity log may be provided at a central system location, such as the at IP Central Station 200." Col. 31, ll. 10-17. Figure 8 of Kung includes an example call log. The call log is stored at BRG 300 and/or IP central station 200. Col. 32, ll.9-10. The system subscriber's customer premises equipment (broadband residential gateway 300) records the call log data and forwards the call log data to other locations, such as to IP central station 200, for billing purposes as an example. Figure 8;

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'319 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
			Col. 35, l. 37 - col. 36, l. 10. Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Janning to include a system management platform, for example, to collect call log data from the network devices of Janning.
	distributing the plurality of network devices (set-top box 202) that each include a telephone line interface (telephone modem adapter 320 providing interface to telephone 204), a computer data interface (media adapter 318 providing a computer data interface to set-top box 202, 300. Alternatively, expansion bus interface 322 provides a connection for a keyboard and mouse adapter 324 and an infrared adapter 326 to receive computer data from, for example, a keyboard or mouse), a broadband network interface terminating a link from the shared packet network (local area network adapter 310 provides broadband connection to proxy server 218 or the interface to the cable network)	"Set-top device 300, in a preferred embodiment, employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures, such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used." Figure 3; Col. 5, l. 65 - col. 6, l. 5. Col. 6, ll. 50-54; Col. 6, l. 63 - Col. 7, l. 1. See also Ethernet and twisted pair connections in Figure 4, Col. 7, ll. 53-57. "Local area network (LAN) adapter 310 connects to PCI local bus 306 and provides a connection, such as an ethernet connection, to a proxy server, such as proxy server 110 in FIG. 1." Col. 6, ll. 9-13. "A telephone/modem adapter 320 is also provided in which voice calls and data from a PSTN may be facilitated." Col. 6, ll. 61-62.	
	a processor (processor 302 in set-top box 202, 300);	"PCI bridge 308 also may include an integrated memory controller and cache memory for processor 302." Col. 6, ll. 5 -	

'819 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		6.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (main memory 304 or cache memory within PCI bridge 308, both in set top box 202, 300),	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5- 8.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (SIP application 400/402). and to send call log data to the system management platform (proxy server 218).	System management platform: SIP application 400 sends call log data to proxy server 218. Although not depicted, proxy server 218 may serve more than one SIP application 400. "SIP transparently supports name mapping and redirection services, allowing the implementation of ISDN and Intelligent Network telephony subscriber services. These facilities also enable personal mobility. Personal mobility is the ability of end users to originate calls, receive calls, and access subscribed telecommunication services on any terminal and in any location." Col. 4, ll. 23-29. "In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	Base System— Janning discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, set-top box 202). Known Technique—A person having ordinary skill in the art in 2001 would have been well-aware of system management platform technology. Kung, for example, describes a system management platform collecting call log data from a plurality of network devices. For example, Kung teaches an IP central station 200 that stores a call log: "The present invention may include an activity log that may have user proactive bill management capability and be used in the aforementioned broadband communication system. The activity log may log, for example, incoming calls directory numbers (DNs) and outgoing call DNs in a database. The database containing the activity log may be provided at a central system location, such as the at IP Central Station 200." Col. 31, ll. 10-17. Figure 8 of Kung includes an example call log. The call log is stored at BRG 300 and/or IP central

'819 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
			station 200. Col. 32, ll.9-10. The system subscriber's customer premises equipment (broadband residential gateway 300) records the call log data and forwards the call log data to other locations, such as to IP central station 200, for billing purposes as an example. Figure 8; Col. 35, l. 37 - col. 36, l. 10. Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Janning to include a system management platform, for example, to collect call log data from the network devices of Janning.
Claim 14	The method of claim 13, wherein for each device the broadband network interface terminates a link from the shared packet network.	"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than	

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"SIP control 402 includes the appropriate interfaces, such as, for example, application programming interfaces (APIs), to communicate with the various drivers in SIP application 400. The actual drivers employed depend on the hardware used to implement SIP application 400. More specifically, SIP control 402 exchanges SIP messages with a source, such as a proxy server, to setup a session. The session may involve, for example, a telephone call, a video, or controlling various devices." Col. 8, ll. 6-14.	
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	"SIP control 402 includes the appropriate interfaces, such as, for example, application programming interfaces (APIs), to communicate with the various drivers in SIP application 400. The actual drivers employed depend on the hardware used to implement SIP application 400. More specifically, SIP control 402 exchanges SIP messages with a source, such as a proxy server, to setup a session. The session may involve, for example, a telephone call, a video, or controlling various devices." Col. 8, ll. 6-14.	
Claim 17	The method of claim 13, wherein the shared packet network uses IP protocols.	"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be	

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
		implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	
~~Claim 18~~	~~The method of claim 13, wherein the shared packet network uses ATM protocols.~~	~~"A connection from home 102 to network 108 is present. In this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.~~	
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may	

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		originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.	

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		- 6.	
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (main memory 304 or cache memory within PCI bridge 308, both in set top box 202, 300),	"An operating system runs on processor 302 and is used to coordinate and provide control of various components within set-top device 300 in FIG. 3." Col. 7, ll. 5- 8.	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (SIP application 400/402). and to send call log data to the system management platform (proxy server 218).	System management platform: SIP application 400 sends call log data to proxy server 218. Although not depicted, proxy server 218 may serve more than one SIP application 400. "SIP transparently supports name mapping and redirection services, allowing the implementation of ISDN and Intelligent Network telephony subscriber services. These facilities also enable personal mobility. Personal mobility is the ability of end users to originate calls, receive calls, and access subscribed telecommunication services on any terminal and in any location." Col. 4, ll. 23-29. "In this manner, multiple subscribers are able to access the set-top device. Next, the set-top device sends a register request to a proxy server for the subscriber (step 504). The proxy server will verify the subscriber and identify services associated with the subscriber. In this manner, services for the subscriber can be directed to the subscriber through the set-top device. This registration process allows for services and the billing of services to follow the subscriber, rather than being based upon a particular hardware unit. Next, the response is received (step 506) with the process terminating thereafter." Col. 9, ll. 49-59.	
Claim 18	The method of claim 13, wherein the shared	"A connection from home 102 to network 108 is present. In	To the extent that Janning does not explicitly teach

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'519 Claim	Claim Limitations	Janning U.S. Patent 7,024,461	Secondary References
	packet network uses ATM protocols.	this example, network 108 is the Internet, with network 108 representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages. Of course, network 108 also may be implemented as a number of different types of networks, such as, for example, network 108 may be a local area network (LAN) or a wide area network (WAN). Additionally, network 108 may be a broadband network providing broadband services. A broadband service is a service requiring transmission channels capable of supporting rates greater than 1.5 Mbps, a primary rate integrated services digital network (ISDN), TS1, or DS1 in digital terminology." Col. 3, ll. 10-28.	ATM protocols, the use of ATM protocols in network devices was well known in the art by 2001. For example, Osterhout (U.S. Patent 7,197,029) teaches ATM protocols. Col. 6, ll. 1-5. Therefore the use of ATM protocols would have been a simple design choice to one of ordinary skill in the art.
~~Claim 19~~	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface (home 102 receives streaming video from proxy server 110).	"In this example, proxy server 110 provides access for various services to home 102 across network 108. For example, proxy server 110 may be used to direct a call using voice over Internet Protocol (IP) to home 102. This call may originate from a device in PSTN 104, with part of the call path being over network 108. Also, proxy server 110 may receive requests from home 102 for video and stream the requested video to home 102. The connection between home 102 and proxy server 110 may take various forms, such as an Ethernet connection established using an asymmetric digital subscriber loop (ADSL) line or an integrated services digital network (ISDN) line. Further, a high bandwidth twisted pair or optical fiber also may be used to provide the connection between home 102 and proxy server 110." Col. 3, ll. 29-42.	

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Claim 1	A network device (home LAN hub 20 and telephone module 16 and data module 18) comprising: a plurality of communication interfaces, including a telephone line interface (telephone module 16), a computer data interface (data module 18), and a broadband network interface (interface to ADSL modem 22);	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and receive voice and data (Figure 2; Col. 6, ll. 15-16)
	a processor (CPU 74 of figure 3A);	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.
	a machine-readable storage medium (DRAM 78, SRAM 83, flash memory 76, RAM 80) which during use stores	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.
	a call processing application (call processing software 360) and	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.
	service profiles (user data stored at HLH 20A routed to CPA 42 to access services),	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own

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		software and services." Col. 5, ll. 57-64.
	and which stores executable instructions to mediate communications between the plurality of communication interfaces (call processing software 360),	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.
	the instructions causing the network device to detect network signaling events or trigger points in a telephone call (call processing software 360 detects signaling events) and	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events),	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.
	the call processing application operating according to parameters defined in the	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42

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	service profiles	which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.
Claim 2	The network device of claim 1, wherein the plurality of communication interfaces further includes a video streaming device interface.	"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.
Claim 3	The network device of claim 1, wherein the broadband network interface terminates a broadband network link that joins a customer premises to a packet carrier network.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.
Claim 4	The network device of claim 1, wherein the instructions further cause the network device to route IP data between the computer data interface and the broadband network interface.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.
Claim 5	The network device of claim 1, wherein the network device is contained in a single physical enclosure.	HLH 20A is contained in a single physical enclosure. Figure 1.

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Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line interface.	"A residential gateway (RGW) 502 at the home includes a home LAN device 520 and a cable modem 522. Similar to the functionality provided by the HLH 20 (FIG. 1), the home LAN device 520 terminates the home LAN physical and MAC layers. Unlike the HLH 20 which converts PCM voice samples received from the TMs to AAL1 cells for transport over ADSL, the home LAN device 520 passes PCM voice samples and signaling (in-band and out-of-band) to cable modem 522 via a well-defined interface such as a TDM bus, RJ-11 or IP interface. The cable modem 522 transports the voice and signaling within IP packets to a hub or router 504 (e.g., a model UBR 7426 device). The hub 504 transports the IP packets to an IP-to-ATM converter 506 (e.g., Cisco Systems 7500 switch) which routes ATM cells through ATM network 508 to a GR-303 gateway switch 512 (e.g., Cisco Systems MGX switch). At the gateway 512, ATM to IP to DS0 conversion takes place such that each voice call is transported in a DS0 to Class 5 digital switch 516." Col. 43, ll. 21-39.
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	"A residential gateway (RGW) 502 at the home includes a home LAN device 520 and a cable modem 522. Similar to the functionality provided by the HLH 20 (FIG. 1), the home LAN device 520 terminates the home LAN physical and MAC layers. Unlike the HLH 20 which converts PCM voice samples received from the TMs to AAL1 cells for transport over ADSL, the home LAN device 520 passes PCM voice samples and signaling (in-band and out-of-band) to cable modem 522 via a well-defined interface such as a TDM bus, RJ-11 or IP interface. The cable modem 522 transports the voice and signaling within IP packets to a hub or router 504 (e.g., a model UBR 7426 device). The hub 504 transports the IP packets to an IP-to-ATM converter 506 (e.g., Cisco Systems 7500 switch) which routes ATM cells through ATM network 508 to a GR-303 gateway switch 512 (e.g., Cisco Systems MGX switch). At the gateway 512, ATM to IP to DS0 conversion takes place such that each voice call is transported in a DS0 to Class 5 digital switch 516." Col. 43, ll. 21-39.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising:	"The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes

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	locating a system management platform in a shared packet network (CPA 42), the system management platform collecting call log data from a plurality of network devices ; and	provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH. The CPA 42 further includes a local craft interface 56A for local monitoring, provisioning and testing and an SNMP manager 56B for receiving SNMP traps, retrieving status and counter values and displaying configuration information." Col. 39, ll. 38-52.
	distributing the plurality of network devices (HLH 20A) that each include a telephone line interface (telephone module 16), a computer data interface (data module 18), a broadband network interface terminating a link from the shared packet network (interface to ADSL modem 22)	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and receive voice and data (Figure 2; Col. 6, ll. 15-16)
	a processor (CPU 74 of figure 3A);	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.
	a machine-readable storage medium (DRAM 78, SRAM 83, flash memory 76, RAM 80) storing processor-executable instructions to control telephone calls (call processing software 360)),	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29. "The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software

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		is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (a voice or other path, such as VoIP or VOATM, may be established between the USB telephone 102 and the recipient telephone device 120). and to send call log data to the system management platform (CPA 42).	"HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 18-25. "The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH." Col. 39, ll. 38-47.
Claim 14	The method of claim 13, wherein for each device the broadband network interface terminates a link from the shared packet network.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.
Claim 17	The method of claim 13, wherein the shared packet network uses IP protocols.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32

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		over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.
Claim 18	The method of claim 13, wherein the shared packet network uses ATM protocols.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.
Claim 19	~~The method of claim 13, wherein~~ the plurality of network devices each further include a video streaming device interface.	~~"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.~~

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		module 406." Col. 40, ll. 38-49.	
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events).	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.	
	the call processing application operating according to parameters defined in the service profiles	"In addition, the AAL5 cells are routed to a call processing agent (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.	
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.	
Claim 2	The network device of claim 1, wherein the plurality of communication interfaces further includes a video streaming device interface.	"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.	To the extent that Nodoushani does not explicitly teach a video streaming device interface, Osterhout (U.S. Patent 7,197,029) teaches interfaces for a telephone that make use of audio, video, and other media. Col. 6, ll. 1-5.

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			Osterhout explains the need for video interfaces in network devices for video conferencing: "The native media applications may likewise include an audio/visual module 134b, such as an audio management tool such as an MP3 codec, RealAudio or other package. A video management tool such as Avid, RealVideo or other packages or protocols may also be used for video teleconferencing or other applications, if the USB telephone 102, host computer 106 or other resources are equipped with video input. Video or combined audio/video streams again may be output over data network or telephony links. Other multimedia applications are possible." Col. 5, l. 62 - Col. 6, l. 5. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize Osterhout's video streaming device interface in Nodoushani to provide an interface for video conferencing data, for example.
Claim 9	A network device (home LAN hub 20 and telephone module 16 and data module 18) comprising: a broadband network interface (interface to ADSL modem 22); a plurality of communication interfaces, including a telephone line interface (telephone module 16) and a computer data interface (data module 18); and;	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and	

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		module 406." Col. 40, ll. 38-49.	
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events),	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.	
	the call processing application operating according to parameters defined in the service profiles	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.	
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.	
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the	**Base System**— Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary

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		HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary

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			skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Nodoushani to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (CPA 42), the system management platform collecting call log data from a plurality of network devices ; and	"The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH. The CPA 42 further includes a local craft interface 56A for local monitoring, provisioning and testing and an SNMP manager 56B for receiving SNMP traps, retrieving status and counter values and displaying configuration information." Col. 39, ll. 38-52.	
	distributing the plurality of network devices (HLH 20A) that each include a telephone line interface (telephone module 16), a computer data interface (data module 18),	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14.	

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Claim 9	A network device (home LAN hub 20 and telephone module 16 and data module 18) comprising: a broadband network interface (interface to ADSL modem 22); a plurality of communication interfaces, including a telephone line interface (telephone module 16) and a computer data interface (data module 18), and;	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and receive voice and data (Figure 2; Col. 6, ll. 15-16)	
	a processor (CPU 74 of figure 3A);	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	
	a machine-readable storage medium (DRAM 78, SRAM 83, flash memory 76, RAM 80) that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (call processing software 360)	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (call processing software 360), and the instructions further causing the network device to implement a SIP proxy server (HLH controller 82) that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without	Base System— Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a

'519 Claim	Claim Limitations	Nodoushani US Patent 6,563,816	Secondary References
		necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the

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Nodoushani in view of Osterhout

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			telephones in Nodoushani to participate in SIP-based telephony systems.
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.	To the extent that Nodoushani does not explicitly teach a video streaming device interface, Osterhout (U.S. Patent 7,197,029) teaches interfaces for a telephone that make use of audio, video, and other media. Col. 6, ll. 1-5.
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	HLH 20A is contained in a single physical enclosure. Figure 1.	

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,876	Secondary References
	recipient telephone device 120). and to send call log data to the system management platform (CPA 42).	necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 18-25. "The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH." Col. 39, ll. 38-47.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	**Base System**— Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,876	Secondary References
			device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Nodoushani to participate in SIP-based telephony systems.
Claim 16	The method of claim 13, wherein the storage	"The call processing communication over the home LAN	**Base System**— Nodoushani discloses a network

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
	medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Nodoushani to participate in SIP-based telephony systems.

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH." Col. 39, ll. 38-47.	
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface.	"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.	To the extent that Nodoushani does not explicitly teach a video streaming device interface, Osterhout (U.S. Patent 7,197,029) teaches interfaces for a telephone that make use of audio, video, and other media. Col. 6, ll. 1-5. Osterhout explains the need for video interfaces in network devices for video conferencing: "The native media applications may likewise include an audio/visual module 134b, such as an audio management tool such as an MP3 codec, RealAudio or other package. A video management tool such as Avid, RealVideo or other packages or protocols may also be used for video teleconferencing or other applications, if the USB telephone 102, host computer 106 or other resources are equipped with video input. Video or combined audio/video streams again may be output over data network or telephony links. Other multimedia applications are possible." Col. 5, l. 62 - Col. 6, l. 5.

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize Osterhout's video streaming device interface in Nodoushani to provide an interface for video conferencing data, for example.

Nodoushani in view of Wengrovitz

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		module 406." Col. 40, ll. 38-49.	
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events).	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.	
	the call processing application operating according to parameters defined in the service profiles	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.	
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.	
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the	**Base System**—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary

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		HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack."

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'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (CPA 42), the system management platform collecting call log data from a plurality of network devices ; and	"The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH. The CPA 42 further includes a local craft interface 56A for local monitoring, provisioning and testing and an SNMP manager 56B for receiving SNMP traps, retrieving status and counter values and displaying configuration information." Col. 39, ll. 38-52.	
	distributing the plurality of network devices (HLH 20A) that each include a telephone line interface (telephone module 16),	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15	

Nodoushani in view of Wengrovitz

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
Claim 9	A network device (home LAN hub 20 and telephone module 16 and data module 18) comprising: a broadband network interface (interface to ADSL modem 22); a plurality of communication interfaces, including a telephone line interface (telephone module 16) and a computer data interface (data module 18), and;	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and receive voice and data (Figure 2; Col. 6, ll. 15-16)	
	a processor (CPU 74 of figure 3A);	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	
	a machine-readable storage medium (DRAM 78, SRAM 83, flash memory 76, RAM 80) that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (call processing software 360)	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (call processing software 360), and the instructions further causing the network device to implement a SIP proxy server (HLH controller 82) that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without	Base System—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Wengrovitz Secondary References
		necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Wengrovitz Secondary References
			components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.	
Claim 11	~~The network device of claim 9,~~ wherein the plurality of interfaces includes a video streaming device interface.	"Data signals associated with the DMs 18 are carried ~~separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance~~ (HomePNA) specification." Col. 6, ll. 29-32.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	HLH 20A is contained in a single physical enclosure. Figure 1.	

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
	such as VoIP or VOATM, may be established between the USB telephone 102 and the recipient telephone device 120). and to send call log data to the system management platform (CPA 42).	42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 18-25. "The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH." Col. 39, ll. 38-47.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	Base System—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). Known Technique—A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			(PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42: This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	**Base System**—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.

Nodoushani in view of Girard-SIP

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		module 406." Col. 40, ll. 38-49.	
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events).	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 404 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.	
	the call processing application operating according to parameters defined in the service profiles	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.	
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.	
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the	Base System—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). Known Technique— A person having ordinary

Nodoushani in view of Girard-SIP

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. Improved System—A person having ordinary

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,810	Secondary References
			skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (CPA 42), the system management platform collecting call log data from a plurality of network devices ; and	"The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH. The CPA 42 further includes a local craft interface 56A for local monitoring, provisioning and testing and an SNMP manager 56B for receiving SNMP traps, retrieving status and counter values and displaying configuration information." Col. 39, ll. 38-52.	
	distributing the plurality of network devices (HLH 20A) that each include a telephone line interface (telephone module 16), a computer data interface (data module 18),	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14.	

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,810	Secondary References
Claim 9	A network device (home LAN hub 20 and telephone module 16 and data module 18) comprising: a broadband network interface (interface to ADSL modem 22); a plurality of communication interfaces, including a telephone line interface (telephone module 16) and a computer data interface (data module 18), and;	"The home LAN 15 includes telephone modules 16 and data modules 18 connected to a home LAN hub 20 over the existing in-home telephone wiring 14. The home LAN 15 is shown in more detail in the functional block diagram of FIG. 2. In a particular embodiment, the home LAN 15 accommodates up to four telephone modules 16A-16D and one or more data modules 18." Col. 6, ll. 8-14. The HLH 20 connects to the home wiring 14 to transmit and receive voice and data (Figure 2; Col. 6, ll. 15-16)	
	a processor (CPU 74 of figure 3A);	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	
	a machine-readable storage medium (DRAM 78, SRAM 83, flash memory 76, RAM 80) that stores processor-a machine-readable storage medium that stores processor-executable instructions to provide SIP agents (call processing software 360)	"The HLH 20A further includes a CPU 74 with synchronous DRAM 78, SRAM 83, flash memory 76, RS-232 interface 75 and clock generator 79. The CPU 74 configures and monitors the HLH 20A." Col. 7, ll. 26-29.	See insert
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (call processing software 360), and the instructions further causing the network device to implement a SIP proxy server (HLH controller 82) that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without	Base System—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). Known Technique— A person having ordinary ~~skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Wengrovitz teaches a SIP user agent to represent a non-SIP telephone and a~~

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	SIP proxy server that mediates all SIP communications. For example, Wengrovitz states: "Switching device 50 is preferably a private branch exchange (PBX) unit managing incoming and outgoing calls for a particular location. Switching device 50 includes an emulation client 50a for converting incoming SIP messages into PBX messages and outgoing PBX messages into SIP messages. In its simplest form, the emulation client 50a takes the role of a UAC 15 in the data communication network. According to one embodiment of the invention, the emulation client 50a is implemented as a software program executing on the internal PBX processor." Wengrovitz, Col. 4, ll. 11-21. Wengrovitz explains the need for enabling legacy telephones to make and receive SIP calls: "there is a need in the current art for a system and method for enabling legacy telephones to participate seamlessly in SIP-based telephony systems. Such a system and method should allow legacy telephones to seamlessly make and receive SIP calls with other legacy telephones as well as with telephones with SIP functionality without requiring that such legacy telephones be equipped with their own SIP stack." Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP

Secondary References
skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. Improved System—A person having ordinary

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Appendix I4 (modified)

Secondary References
skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.

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'519 Claim	Claim Limitations	Nodoushani US Patent 6,538,810	Secondary References
			components and apply the well-known techniques taught by Wengrovitz, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	"The AAL1 and AAL5 formatted cells are transmitted to the access gateway 32 over a local copper loop 30 using an asynchronous digital subscriber line (ADSL) modem 22. It should be noted that in alternate embodiments described further herein, the local loop 30 can be a cable television transmission facility, the ADSL modem 22 can be a cable modem and the voice samples can be converted to Internet Protocol (IP) packets rather than ATM cells. The ADSL modem 22 can also be an xDSL device or a wireless access device." Col. 5, ll. 31-40.	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	"Data signals associated with the DMs 18 are carried separately over the home wiring 14 using a known protocol such as the Home Phoneline Networking Alliance (HomePNA) specification." Col. 6, ll. 29-32.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	HLH 20A is contained in a single physical enclosure. Figure 1.	

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
	recipient telephone device 120). and to send call log data to the system management platform (CPA 42).	necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 18-25. "The CPA 42 provides subscriber management provisioning which includes HLH initialization and TM provisioning. In particular, the HLH initialization includes provisioning of the signaling and management virtual circuits and downloading of system configuration information. For each new TM, the CPA subscriber management provides the following functions: provisioning of the bearer channel virtual circuit; assignment of the CRV and TM port number; creation of the HLH association; and downloading of the TM related configuration information into the HLH." Col. 39, ll. 38-47.	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"The call processing communication over the home LAN signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	**Base System**—Nodoushani discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony applications." Girard, Page 1. **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.
Claim 16	The method of claim 13, wherein the storage	"The call processing communication over the home LAN	**Base System**—Nodoushani discloses a network

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
	medium further stores processor-executable Instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	signaling channels 362A includes call processing messages preferably in accordance with the Media Gateway Control Protocol (MGCP), a proposed Internet Engineering Task Force (IETF) standard that allows the CPA 42 to control the HLH 20 from a control plane (C-Plane) perspective. The use of MGCP for control provides an open, standards-based interface between the switching elements 44, 50 and the CPA 42. This gives service providers the flexibility to upgrade switching elements to next generation technologies without necessarily upgrading the control infrastructure. It should be noted, however, that other protocols can be used such as H.323 and Session Initiation Protocol (SIP)." Col. 35, ll. 13-25.	device for establishing a voice-over-packet network architecture (*e.g.*, HLH 20). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Girard teaches a SIP user agent (SIP User Agent in the softswitch utilizing the SIP signaling pathway established for initial call setup) to represent a non-SIP telephone and a SIP proxy server that is a concatenation of a UAC and UAS. For example, Girard states that the Application Server includes a SIP Proxy Server as defined by prosecuting counsel for the '519 Patent: "Using a SIP User Agent Client (UAC), telephony applications running on the APPLICATION SERVER may create connections between any two network endpoints in any connectivity domain (IP, ATM, PSTN, etc.) that is addressable by the SOFTSWITCH and the MGs under its control. The APPLICATION SERVER also contains a SIP User Agent Server (UAS)." Girard, Figure 2; Pages 1 and 6. Girard explains the need for enabling legacy telephones to make and receive SIP calls: "this SIP-Telephony Service Interface (SIP-TSI) is capable of supporting a level of telephony application functionality commensurate with Time Division Multiplex device interfaces used in legacy PSTN voice and facsimile telephony

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
			applications." Girard, Page 1. **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Nodoushani to include these well-known claimed SIP components and apply the well-known techniques taught by Girard, for example, to enable the telephones in *Nodoushani* to participate in SIP-based telephony systems.

Nodoushani in view of Chung

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
		module 406." Col. 40, ll. 38-49.	
	invoke the call processing application in response to the detected network signaling events or trigger points (call processing software 360 invoked based on signaling events),	"The call processing software 360 (also shown in FIG. 24) sets up and tears down connections based on commands received from the CPA 42 as described above. The call processing software also notifies the CPA of relevant events such as on-hook/off-hook signaling status, also described above. While most of the home LAN protocol is implemented in hardware in the preferred embodiment, software is needed to control such hardware. A home LAN driver 504 provides this control function. Additionally, some of the home LAN protocol, such as TM registration and on-hook/off-hook detection, is implemented in a home LAN protocol software module 406." Col. 40, ll. 38-49.	
	the call processing application operating according to parameters defined in the service profiles	"In addition, the AAL5 cells are routed to a call processing adjunct (CPA) 42 which converts these particular cells to GR-303 call processing messages. These conversions enable subscribers at homes 12 to access well-known services and custom calling features offered by the LDS 50 in a transparent manner, thereby obviating the need for access service providers to develop and deploy their own software and services." Col. 5, ll. 57-64.	
	wherein the network device consists of one or more customer premise equipment modules (HLH 20A).	The home LAN 15 includes telephone modules (TMs) 16 and data modules (DMs) 18 connected to a home LAN hub (HLH) 20 over existing in-home telephone wiring 14.	
Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line	"A residential gateway (RGW) 502 at the home includes a home LAN device 520 and a cable modem 522. Similar to the functionality provided by the HLH 20 (FIG. 1), the home LAN device 520 terminates the home LAN physical and MAC layers. Unlike the HLH 20 which converts PCM voice	To the extent that Nodoushani does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the

Nodoushani in view of Chung

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary References
	interface.	samples received from the TMs to AAL1 cells for transport over ADSL, the home LAN device 520 passes PCM voice samples and signaling (in-band and out-of-band) to cable modem 522 via a well-defined interface such as a TDM bus, RJ-11 or IP interface. The cable modem 522 transports the voice and signaling within IP packets to a hub or router 504 (e.g., a model UBR 7426 device). The hub 504 transports the IP packets to an IP-to-ATM converter 506 (e.g., Cisco Systems 7500 switch) which routes ATM cells through ATM network 508 to a GR-303 gateway switch 512 (e.g., Cisco Systems MGX switch). At the gateway 512, ATM to IP to DS0 conversion takes place such that each voice call is transported in a DS0 to Class 5 digital switch 516." Col. 43, ll. 21-39.	private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid the need for call routing through the private branch exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Nodoushani to efficiently route telephone calls, for example.
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	"A residential gateway (RGW) 502 at the home includes a home LAN device 520 and a cable modem 522. Similar to the functionality provided by the HLH 20 (FIG. 1), the home LAN device 520 terminates the home LAN physical and MAC layers. Unlike the HLH 20 which converts PCM voice samples received from the TMs to AAL1 cells for transport over ADSL, the home LAN device 520 passes PCM voice samples and signaling (in-band and out-of-band) to cable modem 522 via a well-defined interface such as a TDM bus, RJ-11 or IP interface. The cable modem 522 transports the voice and signaling within IP packets to a hub or router 504 (e.g., a model UBR 7426 device). The hub 504 transports the IP packets to an IP-to-ATM converter 506 (e.g., Cisco	To the extent that Nodoushani does not explicitly teach call routing tables, Chung (U.S. Patent 6584108) teaches call routing tables. "The extra digits are passed on to the private branch exchange which will use them to connect the call to the correct extension. Call routing is supported via a static mapping table in each MAC, but the embodiment is not so limited." (Col. 16, ll. 14-18). Chung teaches the use of call routing tables in order to efficiently route telephone calls and avoid

Nodoushani in view of Chung

'519 Claim	Claim Limitations	Nodoushani U.S. Patent 6,563,816	Secondary Reference
		Systems 7500 switch) which routes ATM cells through ATM network 508 to a GR-303 gateway switch 512 (e.g., Cisco Systems MGX switch). At the gateway 512, ATM to IP to DS0 conversion takes place such that each voice call is transported in a DS0 to Class 5 digital switch 516." Col. 43, ll. 21-39.	the need for call routing through the private branch exchange. Col. 16., ll. 41-50. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to utilize call routing tables as taught by Chung (U.S. Patent 6584108) to enable the network device telephones of Nodoushani to efficiently route telephone calls, for example.

Chow

'519 Claim	Claim Limitations	Chow U.S. Publication No. 2003/0185203
Claim 1	A network device (CSM 6) comprising: a plurality of communication interfaces, including a telephone line interface (SSI 21 includes a T/R interface), a computer data interface (SSI 21 includes a parallel port interface and an Ethernet interface), and a broadband network interface (SPNAI 27);	Chow teaches a network architecture that integrates broadband subscriber services from a service provider (FIGURE 1; [0038]). Subscriber Site Interface (SSI) 21 connects with T/R telephones. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station (e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Subscriber Site Interface (SSI) 21 connects with computers. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station (e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]).
	a processor (CPU 23);	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25." (FIGURE 2; [0047])
	a machine-readable storage medium (memory 24 of CSM 6) which during use stores	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25." (FIGURE 2; [0047])
	a call processing application (call processing inter-working unit 25 or the other software at CSM 6 that performs services) and	call processing application: CSM 6 includes software, such as call processing inter-working unit 25, that performs call processing. (FIGURE 2; [0047]). "6. Provide call feature, service activation and support (e.g., multiple way conferencing, CODEC, echo cancellation, voice-mail, e-mail, routing, call feature

'519 Claim	Claim Limitations	Chow U.S. Publication No. 2003/0185203
		applications, routing of calls, mobility management, etc.);" (FIGURE 2;[0077]).
	service profiles (CSM 6 provides residential subscriber database management),	**service profiles:** CSM 6 stores service profiles. "5. Provide residential subscriber database management (e.g., profile etc.);" (FIGURE 2; [0076]).
	and which stores executable instructions to mediate communications between the plurality of communication interfaces (CSM 6 includes instructions to mediate communications between the plurality of communication interfaces),	**instructions to mediate communications** Processor 102 is configured to mediate communications. "Integration of CPEs including the capability to route voice/data traffic among the local CPEs (e.g., LAN emulation);" (FIGURE 2; [0072]).
	the instructions causing the network device to detect network signaling events or trigger points in a telephone call (CSM 6 detects signaling events) and	CSM 6 detects network signaling events. "Ted is using his video-phone and tells his CSM to call Paul for video-telephony. His CSM finds Paul's CSMN, 555-2222, in the CSM's address book stored, for example, in a database within memory 24 shown in FIG. 2 and sends a signaling request to the network to Paul's CSM. When Paul's CSM detects the incoming request, it will parse the signaling to determine who is the request for, the type of request, and other service data." ([0156-0159]).
	invoke the call processing application in response to the detected network signaling events or trigger points (CSM 6 invokes the call processing application),	CSM 6 invokes the call processing application in response to the detected network signaling events or trigger points, the call processing application operating according to parameters defined in the service profiles. "Ted is using his video-phone and tells his CSM to call Paul for video-telephony. His CSM finds Paul's CSMN, 555-2222, in the CSM's address book stored, for example, in a database within memory 24 shown in FIG. 2 and sends a signaling request to the network to Paul's CSM. When Paul's CSM detects the incoming request, it will parse the signaling to determine who is the request for, the type of request, and other service data. The CSM will determine that Paul is available to receive such a request, (i.e., Paul has not informed the CSM to redirect his calls) and will acknowledge the request, allocate the bandwidth from the UDS pipe (e.g., 384 Kbps), and direct the call to Paul's video-telephone." ([0156-0159]).
	the call processing application operating according to parameters defined in the	**service profiles:** CSM 6 stores service profiles. "5. Provide residential subscriber

'519 Claim	Claim Limitations	Chow U.S. Publication No. 2003/0185203
	service profiles	database management (e.g., profile etc.);" (FIGURE 2; [0076]).
	wherein the network device consists of one or more customer premise equipment modules (CSM 6).	"In accordance with the present invention, all of the existing Customer Premises Equipment ("CPE", i.e, equipment not provided to the customer by the service provider) is coupled to a Customer Service Manager (CSM) 6. As shown in FIG. 1, the CPEs may include a remote laptop computer interface 2, video phone 3, computer 4 and telephone 5. As in the typical home environment, the various CPEs may be located in different rooms within the home and are connected to CSM 6 by direct signal wire connection or other suitable means." ([0039])
Claim 2	The network device of claim 1, wherein the plurality of communication interfaces further includes a video streaming device interface.	Video phone 3. Figure 1.
Claim 3	The network device of claim 1, wherein the broadband network interface terminates a broadband network link that joins a customer premises to a packet carrier network.	"The integrated system of the present invention can be implemented with a broadband packet access network as the supporting infrastructure that enables the UDS pipe access to the service provider's core backbone network. Such a network is capable of supporting the traditional circuit-switched connection, IP-based connection less packets and mobile IP for personal mobility. It is envisioned that the intelligence of the network will be distributed to the home environment for the subscriber to control how service is rendered. The methodology and the service applications necessary to cost effectively integrate a UDS pipe for local access services with integrated voice, data and multimedia applications from the home is an important objective of the present invention." ([0029])
Claim 4	The network device of claim 1, wherein the instructions further cause the network device to route IP data between the computer data interface and the broadband network interface.	"The integrated system of the present invention can be implemented with a broadband packet access network as the supporting infrastructure that enables the UDS pipe access to the service provider's core backbone network. Such a network is capable of supporting the traditional circuit-switched connection, IP-based connection less packets and mobile IP for personal mobility. It is envisioned that the intelligence of the network will be distributed to the home environment for the subscriber to control how service is rendered. The methodology and the service applications necessary to cost effectively integrate a UDS pipe for local access

'519 Claim	Claim Limitations	Chow U.S. Publication No. 2003/0185203
		services with integrated voice, data and multimedia applications from the home is an important objective of the present invention." ([0029])
Claim 5	The network device of claim 1, wherein the network device is contained in a single physical enclosure.	CSM 6 is contained in a single physical enclosure. Figure 1.
Claim 7	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls that use the telephone line interface.	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25. All of these elements are well known in the art and connect to a bus 26 through which data and process instructions pass between elements. Examples of such buses include TDM, packet bus, high speed packet bus, TCP/IP, 10 base T, 100 base T, fiber optic, depending on the required bandwidth. CSM 6 also supports two different types of interfaces, the Subscriber Site Interface (SSI) 21 for the home CPEs and the Service Provider Network Access Interface (SPNAI) 27 for service provider network resources via UDS pipe 1." ([0047-0048]) "6. Provide call feature, service activation and support (e.g., multiple way conferencing, CODEC, echo cancellation, voice-mail, e-mail, routing, call feature applications, routing of calls, mobility management, etc.);" (FIGURE 2;[0077]).
Claim 8	The network device of claim 1, wherein the storage medium during use further stores call routing tables, and the instructions further cause the network device to perform call routing for telephone calls according to the call routing tables, the telephone calls using the telephone line interface.	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25. All of these elements are well known in the art and connect to a bus 26 through which data and process instructions pass between elements. Examples of such buses include TDM, packet bus, high speed packet bus, TCP/IP, 10 base T, 100 base T, fiber optic, depending on the required bandwidth. CSM 6 also supports two different types of interfaces, the Subscriber Site Interface (SSI) 21 for the home CPEs and the Service Provider Network Access Interface (SPNAI) 27 for service provider network resources via UDS pipe 1." ([0047-0048])

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		"6. Provide call feature, service activation and support (e.g., multiple way conferencing, CODEC, echo cancellation, voice-mail, e-mail, routing, call feature applications, routing of calls, mobility management, etc.);" (FIGURE 2;[0077]).
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (IMSM 8), the system management platform collecting call log data from a plurality of network devices ; and	Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]). "Intelligent Multimedia Services Manager (IMSM) 8 provides the network access service intelligence for both CSM 6 and NAM 7. Thus, this broadband packet access architecture creates an access network where the intelligence is distributed to the endpoints of the network and optimizes the service provider's existing transport network based on end-user service requests. This also makes the connection homogeneous to the subscriber." (FIGURE 2;[0042]). "CSM keeps a log of all incoming and outgoing requests;" ([0088])
	distributing the plurality of network devices (CSM 6) that each include a telephone line interface (SSI 21 includes a T/R interface), a computer data interface (SSI 21 includes a parallel port interface and an Ethernet interface), a broadband network interface terminating a link from the shared packet network (SPNAI 27)	Chow teaches a network architecture that integrates broadband subscriber services from a service provider (FIGURE 1; [0038]). Subscriber Site Interface (SSI) 21 connects with T/R telephones. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station (e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Subscriber Site Interface (SSI) 21 connects with computers. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station

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		(e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]).
	a processor (CPU 23);	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25." (FIGURE 2; [0047])
	a machine-readable storage medium storing processor-executable instructions to control telephone calls (call processing inter-working unit 25 or the other software at CSM 6 that performs services),	instructions: CSM 6 includes software, such as call processing inter-working unit 25, that performs call processing. (FIGURE 2; [0047]).
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (end-to-end connection between CSMs 6). and to send call log data to the system management platform (CSM 6 keeps a log of all incoming and outgoing requests and IMSM 8 manages CSMs 6).	peer-to-peer: "The left side of FIG. 1 includes a second NAM 7, a second UDS pipe 1 and a second CSM 6. As shown on the left side of FIG. 1, a plurality of CPEs also would be connected to the second CSM 6 in order to provide an end-to-end connection." ([0044]) "Intelligent Multimedia Services Manager (IMSM) 8 provides the network access service intelligence for both CSM 6 and NAM 7. Thus, this broadband packet access architecture creates an access network where the intelligence is distributed to the endpoints of the network and optimizes the service provider's existing transport network based on end-user service requests. This also makes the connection homogeneous to the subscriber." (FIGURE 2;[0042]). "CSM keeps a log of all incoming and outgoing requests;" ([0088])
Claim 14	The method of claim 13, wherein for each device the broadband network interface terminates a link from the shared packet network.	Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides

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		connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]).
Claim 17	The method of claim 13, wherein the shared packet network uses IP protocols.	"The integrated system of the present invention can be implemented with a broadband packet access network as the supporting infrastructure that enables the UDS pipe access to the service provider's core backbone network. Such a network is capable of supporting the traditional circuit-switched connection, IP-based connection less packets and mobile IP for personal mobility. It is envisioned that the intelligence of the network will be distributed to the home environment for the subscriber to control how service is rendered. The methodology and the service applications necessary to cost effectively integrate a UDS pipe for local access services with integrated voice, data and multimedia applications from the home is an important objective of the present invention." ([0029])
Claim 18	The method of claim 13, wherein the shared packet network uses ATM protocols.	"SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." ([0050])
Claim 19	The method of claim 13, wherein the plurality of network devices each further include a video streaming device interface.	Video phone 3. Figure 1.

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	invoke the call processing application in response to the detected network signaling events or trigger points (CSM 6 invokes the call processing application),	CSM 6 invokes the call processing application in response to the detected network signaling events or trigger points, the call processing application operating according to parameters defined in the service profiles. "Ted is using his video-phone and tells his CSM to call Paul for video-telephony. His CSM finds Paul's CSMN, 555-2222, in the CSM's address book stored, for example, in a database within memory 24 shown in FIG. 2 and sends a signaling request to the network to Paul's CSM. When Paul's CSM detects the incoming request, it will parse the signaling to determine who is the request for, the type of request, and other service data. The CSM will determine that Paul is available to receive such a request, (i.e., Paul has not informed the CSM to redirect his calls) and will acknowledge the request, allocate the bandwidth from the UDS pipe (e.g., 384 Kbps), and direct the call to Paul's video-telephone." ([0156-0158]).	
	the call processing application operating according to parameters defined in the service profiles	service profiles: CSM 6 stores service profiles. "5. Provide residential subscriber database management (e.g., profile etc.);" (FIGURE 2; [0076]).	
	wherein the network device consists of one or more customer premise equipment modules (CSM 6).	"In accordance with the present invention, all of the existing Customer Premises Equipment ("CPE", i.e, equipment not provided to the customer by the service provider) is coupled to a Customer Service Manager (CSM) 6. As shown in FIG. 1, the CPEs may include a remote laptop computer interface 2, video phone 3, computer 4 and telephone 5. As in the typical home environment, the various CPEs may be located in different rooms within the home and are connected to CSM 6 by direct signal wire connection or other suitable means." ([0039])	
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to	SIP user agent: CSM 6 includes software, such as call processing inter-working unit 25, that performs call	Base System— Chow discloses a network device for establishing a voice-over-packet network

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	provide a SIP user agent to represent a telephone that uses the telephone line interface.	processing. (FIGURE 2; [0047]).	architecture (*e.g.*, CSM 6). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of

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			POTS, USB and SIP for maximum connectivity." Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Chow to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Chow to participate in SIP-based telephony systems.
Claim 13	A method for establishing a voice-over-packet network architecture, the method comprising: locating a system management platform in a shared packet network (IMSM 8), the system management platform collecting call log data from a plurality of network devices ; and	Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]). "Intelligent Multimedia Services Manager (IMSM) 8 provides the network access service intelligence for both CSM 6 and NAM 7. Thus, this broadband packet access architecture creates an access network where the intelligence is distributed to the endpoints of the network and optimizes the service provider's existing transport network based on end-user service requests. This also makes the connection homogeneous to the subscriber." (FIGURE 2;[0042]). "CSM keeps a log of all incoming and outgoing requests;" ([0088])	

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Claim 9	A network device (CSM 6) comprising: a broadband network interface (SPNAI 27); a plurality of communication interfaces, including a telephone line interface (SSI 21 includes a T/R interface) and a computer data interface (SSI 21 includes a parallel port interface and an Ethernet interface), and;	Chow teaches a network architecture that integrates broadband subscriber services from a service provider (FIGURE 1; [0038]). Subscriber Site Interface (SSI) 21 connects with T/R telephones. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station (e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Subscriber Site Interface (SSI) 21 connects with computers. "SSI 21 provides local access to the CPEs that may consist of existing residential T/R phone, ISDN/BRI phone, computer modem, fax machine, wireless residential base station (e.g., extension of public cellular service to home, PCS) and LAN, etc.." (FIGURE 2; [0049]). Service Provider Network Access Interface (SPNAI) 27 aggregates the traffic from the attached devices onto a single broadband interface. "SPNAI 27 provides connectivity to UDS pipe 1. CSM 6 is able to suport the various transport technologies implemented for the UDS pipe. CSM 6 converts all information (i.e., voice, data, multimedia and video) into packet (e.g., IP over ATM or voice over IP) based medium for transport to/from the NAM." (FIGURE 2; [0050]).	
	a processor (CPU 23);	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25." (FIGURE 2; [0047])	
	a machine-readable storage medium memory 24 of CSM 6) that stores processor-a machine-	"As shown in FIG. 2, the CSM includes a number of inter-related elements, including an IP router 20, a speech	

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	readable storage medium that stores processor-executable instructions to provide SIP agents (call processing inter-working unit 25 or the other software at CSM 6 that performs services)	processor 22, a CPU 23, memory 24 and a call processsing inter-working unit 25." (FIGURE 2; [0047])	
	the instructions causing the network device to provide a SIP user agent to represent a non-SIP telephone that uses the telephone line interface (call processing inter-working unit 25 or the other software at CSM 6 that performs services), and the instructions further causing the network device to implement a SIP proxy server (CSM 6 includes instructions to mediate communications between the plurality of communication interfaces) that mediates all SIP communications over the broadband network interface involving the non-SIP telephone.	SIP user agents and SIP proxy: CSM 6 includes software, such as call processing inter-working unit 25, that performs call processing. (FIGURE 2; [0047]).	Base System— Chow discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, CSM 6). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone

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			device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." Improved System—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Chow to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Chow to participate in SIP-based telephony systems.
Claim 10	The network device of claim 9, wherein the computer data interface passes IP data.	"The integrated system of the present invention can be implemented with a broadband packet access network as the supporting infrastructure that enables the UDS pipe access to the service provider's core backbone network. Such a network is capable of supporting the traditional circuit-switched connection, IP-based connection less packets and mobile IP for personal mobility. It is envisioned that the intelligence of the network will be distributed to the home environment for the subscriber to control how service is rendered. The methodology and the service applications necessary to cost effectively integrate a UDS pipe for local access services with integrated voice, data and multimedia applications from the home is an important objective of the present invention."	

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		([0029])	
Claim 11	The network device of claim 9, wherein the plurality of interfaces includes a video streaming device interface.	Video phone 3. Figure 1.	
Claim 12	The network device of claim 9, wherein the network device is contained in a single physical enclosure.	CSM 6 is contained in a single physical enclosure. Figure 1.	

Chow in view of Osterhout

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	telephone calls (call processing inter-working unit 25 or the other software at CSM 6 that performs services),	processing. (FIGURE 2; [0047]).	
	the instructions causing each network device to route telephone calls in a peer-to-peer fashion over the shared packet network (end-to-end connection between CSMs 6). and to send call log data to the system management platform (CSM 6 keeps a log of all incoming and outgoing requests and IMSM 8 manages CSMs 6).	peer-to-peer: "The left side of FIG. 1 includes a second NAM 7, a second UDS pipe 1 and a second CSM 6. As shown on the left side of FIG. 1, a plurality of CPEs also would be connected to the second CSM 6 in order to provide an end-to-end connection." ([0044]) "Intelligent Multimedia Services Manager (IMSM) 8 provides the network access service intelligence for both CSM 6 and NAM 7. Thus, this broadband packet access architecture creates an access network where the intelligence is distributed to the endpoints of the network and optimizes the service provider's existing transport network based on end-user service requests. This also makes the connection homogeneous to the subscriber." (FIGURE 2;[0042]). "CSM keeps a log of all incoming and outgoing requests;" ([0088])	
Claim 15	The method of claim 13, wherein the routing of telephone calls includes SIP signaling.	"The integrated system of the present invention can be implemented with a broadband packet access network as the supporting infrastructure that enables the UDS pipe access to the service provider's core backbone network. Such a network is capable of supporting the traditional circuit-switched connection, IP-based connection less packets and mobile IP for personal mobility. It is envisioned that the intelligence of the network will be distributed to the home environment for the subscriber to control how service is rendered. The methodology and the service applications necessary to cost effectively integrate a UDS pipe for local access services with integrated voice, data and multimedia applications from the	Base System— Chow discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, CSM 6). Known Technique— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP

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		home is an important objective of the present invention." ([0029])	communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled, in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Chow to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Chow to participate in SIP-based

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			telephony systems.
Claim 16	The method of claim 13, wherein the storage medium further stores processor-executable instructions to act as an SIP proxy server for devices using the telephone line interface and for devices using the computer data interface.	**SIP proxy server:** CSM 6 detects network signaling events. "Ted is using his video-phone and tells his CSM to call Paul for video-telephony. His CSM finds Paul's CSMN, 555-2222, in the CSM's address book stored, for example, in a database within memory 24 shown in FIG. 2 and sends a signaling request to the network to Paul's CSM. When Paul's CSM detects the incoming request, it will parse the signaling to determine who is the request for, the type of request, and other service data." ([0156-0159]).	**Base System**— Chow discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, CSM 6). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an Internet Engineering Task Force (IETF) standard in 1999 as RFC 2543. Osterhout teaches a SIP user agent to represent a non-SIP telephone and a SIP proxy server that mediates all SIP communications. For example, Osterhout states: "If the criteria are met, the control module 126 may set up the remainder of the resources necessary to establish a SIP-based connection to a recipient telephone device 120. The control module may invoke SIP module 122 and SIP stack 124 to transmit, receive parse SIP commands, a Transfer Control Protocol/Internet Protocol (TCP/IP) client 130 for Internet or other network interface, and a Real Time Protocol (RTP) stack 134 to manage streaming media and other information for call processing." Col. 4, l. 65 - Col. 5 - l. 6. Osterhout explains the need for transparently selecting SIP-based, POTS, or other telephone service: "In a further embodiment, the telephone device itself may be both POTS and SIP enabled,

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			in which case the base of the device contains both telephone (RJ-11 or other) connections plus a network connection or port for SIP, with control logic residing in the telephone device and no computer or other host being necessary. In a yet further embodiment, the telephone device may contain control logic and connections for each of POTS, USB and SIP for maximum connectivity." **Improved System**—A person having ordinary skill in the art in 2001 would have considered it obvious to modify the base system of Chow to include these well-known claimed SIP components and apply the well-known techniques taught by Osterhout, for example, to enable the telephones in Chow to participate in SIP-based telephony systems.

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		finds Paul's CSMN, 555-2222, in the CSM's address book stored, for example, in a database within memory 24 shown in FIG. 2 and sends a signaling request to the network to Paul's CSM. When Paul's CSM detects the incoming request, it will parse the signaling to determine who is the request for, the type of request, and other service data. The CSM will determine that Paul is available to receive such a request, (i.e., Paul has not informed the CSM to redirect his calls) and will acknowledge the request, allocate the bandwidth from the UDS pipe (e.g., 384 Kbps), and direct the call to Paul's video-telephone." ([0156-0159]).	
	the call processing application operating according to parameters defined in the service profiles	service profiles: CSM 6 stores service profiles. "5. Provide residential subscriber database management (e.g., profile etc.);" (FIGURE 2; [0076]).	
	wherein the network device consists of one or more customer premise equipment modules (CSM 6).	"In accordance with the present invention, all of the existing Customer Premises Equipment ("CPE", i.e, equipment not provided to the customer by the service provider) is coupled to a Customer Service Manager (CSM) 6. As shown in FIG. 1, the CPEs may include a remote laptop computer interface 2, video phone 3, computer 4 and telephone 5. As in the typical home environment, the various CPEs may be located in different rooms within the home and are connected to CSM 6 by direct signal wire connection or other suitable means." ([0039])	
Claim 6	The network device of claim 1, wherein the instructions further cause the network device to provide a SIP user agent to represent a telephone that uses the telephone line interface.	**SIP user agent:** CSM 6 includes software, such as call processing inter-working unit 25, that performs call processing. (FIGURE 2; [0047]).	**Base System**—Chow discloses a network device for establishing a voice-over-packet network architecture (*e.g.*, CSM 6). **Known Technique**— A person having ordinary skill in the art in 2001 would have been well-aware of SIP technology since it became an